Kangaroo Resources Limited
ABN: 38 120 284 040
ASX Code: KRL

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Updated Coal Resources and Coal Reserves for Pakar North and South Thermal Coal Projects, Indonesia

Highlights

- Pakar North Coal Reserves increased by 52% from 155Mt to 236Mt. Importantly, the average Calorific Value ("**CV**") for Pakar North has increased from 3,785 Kcal/kg GAR to 3,885 Kcal/kg GAR.

- Coal Resources (which includes Coal Reserves) estimated at 1,090Mt (191Mt Measured, 533Mt Indicated and 366Mt Inferred). Previously estimated Coal Resources at 31 December 2010 were 3,019Mt (111Mt Measured, 1,092Mt Indicated and 1,816Mt Inferred) with the primary reasons for the current reduction being:

    - application of rigorous pit optimisation limits to Coal Resource estimates to satisfy JORC Code 2012 requirement to demonstrate reasonable prospects for eventual economic extraction;

    - relinquishment of approximately 5,118 hectares of Pakar South concessions (refer announcement dated 21 December 2016); and

    - the exclusion of 2,229 hectares of concessions in North and Pakar South that overlap with a third-party coal concession as a result of an ongoing legal dispute (refer announcement dated 22 August 2017).

- Coal Reserves estimated at 399Mt (127Mt Proved and 272Mt Probable). Previously estimated Coal Reserves at 31 December 2010 were 442Mt (16Mt Proved and 426Mt Probable). The small reduction in overall Coal Reserves is primarily due to:

    - a reduction in the long-term Newcastle coal price for Coal Reserve estimation purposes from Free on Board US$95 per tonne to USD$70 per tonne; and

    - relinquishment and exclusion of licence areas as detailed in the preceding highlight point.

- The significant improvement in the Coal Reserves proved to probable ratio (32%:68% versus 4%:96%) is primarily due to the radius of influence of drilling on the adjacent PT. Bayan Resources Tbk ("Bayan") concessions.

- Updated Coal Resources and Coal Reserves estimates have been independently prepared by mining consultant, PT. RungePincockMinarco ("RPM").

1. INTRODUCTION

Kangaroo Resources Limited (ASX: KRL) ("**KRL**" or the "**Company**") is pleased to announce that it has undertaken the necessary geological assessments and studies required to update the estimated Coal Resources and Coal Reserves for each of PT. Tiwa Abadi ("TA"), PT. Tanur Jaya ("TJ") and PT. Dermaga Energi ("DE") (collectively "**Pakar North**") as well as each of PT. Cahaya Alam ("CA"), PT. Bara Sejati ("BS") and PT. Sumber Api ("SA") (collectively "**Pakar South**"[1]) thermal coal projects in Indonesia (in which the Company currently holds or has contractual rights to 99% interest) which are reported in accordance with the reporting guidelines of the 2012 Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australasian Institute of Geoscientists, and Minerals Council of Australia ("**JORC Code 2012**[2]").

There has been no new drilling on the Pakar North and Pakar South areas since 2009 and the primary reason for the independent update of the Coal Resources and Coal Reserves is to bring the Company's reporting in line with the JORC Code 2012 as the Company gets closer to considering development options on its core projects. However, drilling and mining success at the adjacent Bayan concessions has had a positive impact on the updated estimation of the Coal Resources and Coal Reserves. RPM was engaged by the Company to complete independent estimates (the "**Statements**") of the Open Cut Coal Resources and Coal Reserves within Pakar North and Pakar South coal concessions located in East Kalimantan, Indonesia. The Statements report the following Coal Resources and Coal Reserves as at 31 December 2016:

a) total Coal Resources (inclusive of Coal Reserves) for Pakar North and Pakar South have been estimated at 1,090 Mt (191Mt Measured, 533Mt Indicated and 366Mt Inferred); and

b) total Coal Reserves for Pakar North and Pakar South have been estimated at 399Mt (127Mt Proved and 272Mt Probable)

The Coal Resources and Coal Reserves estimate supersedes the prior estimate as at December 2010 and reveals a decrease in Coal Resources of 1,929Mt (80Mt increase in Measured, 559Mt decrease in Indicated and 1,450Mt decrease in Inferred categories) and a decrease in Coal Reserves of 43Mt (111Mt increase in Proved and 154Mt decrease in Probable categories). Further details of the change over this time period are included in Appendix 1.

Coal Resources and Coal Reserves are quoted on a 100% basis.

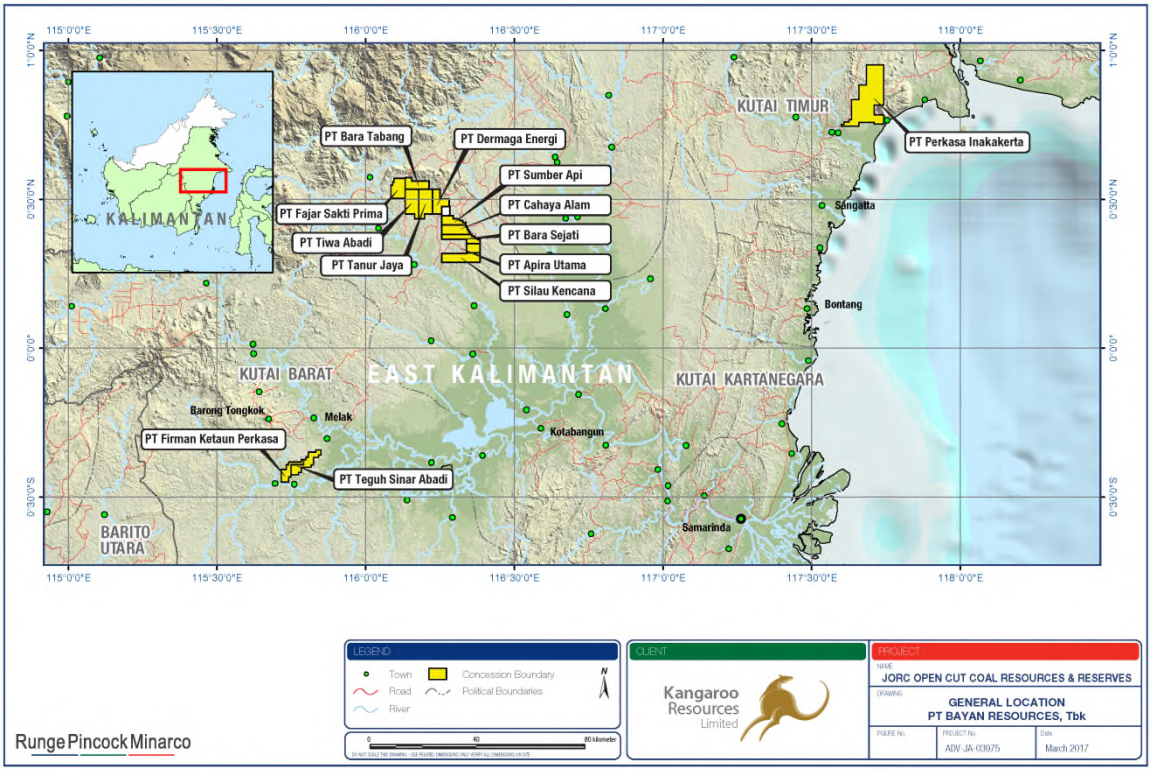
[1] Pakar South also includes PT. Apira Utama and PT. Silau Kencana however RPM determined that these do not have any Coal Resources or Coal Reserves as a result of the concession relinquishments announced previously.

[2] In addition to the JORC Code 2012, the 2014 Australian Guidelines for the Estimation and Classification of Coal Resources was also used by RPM in determining the Coal Resources.

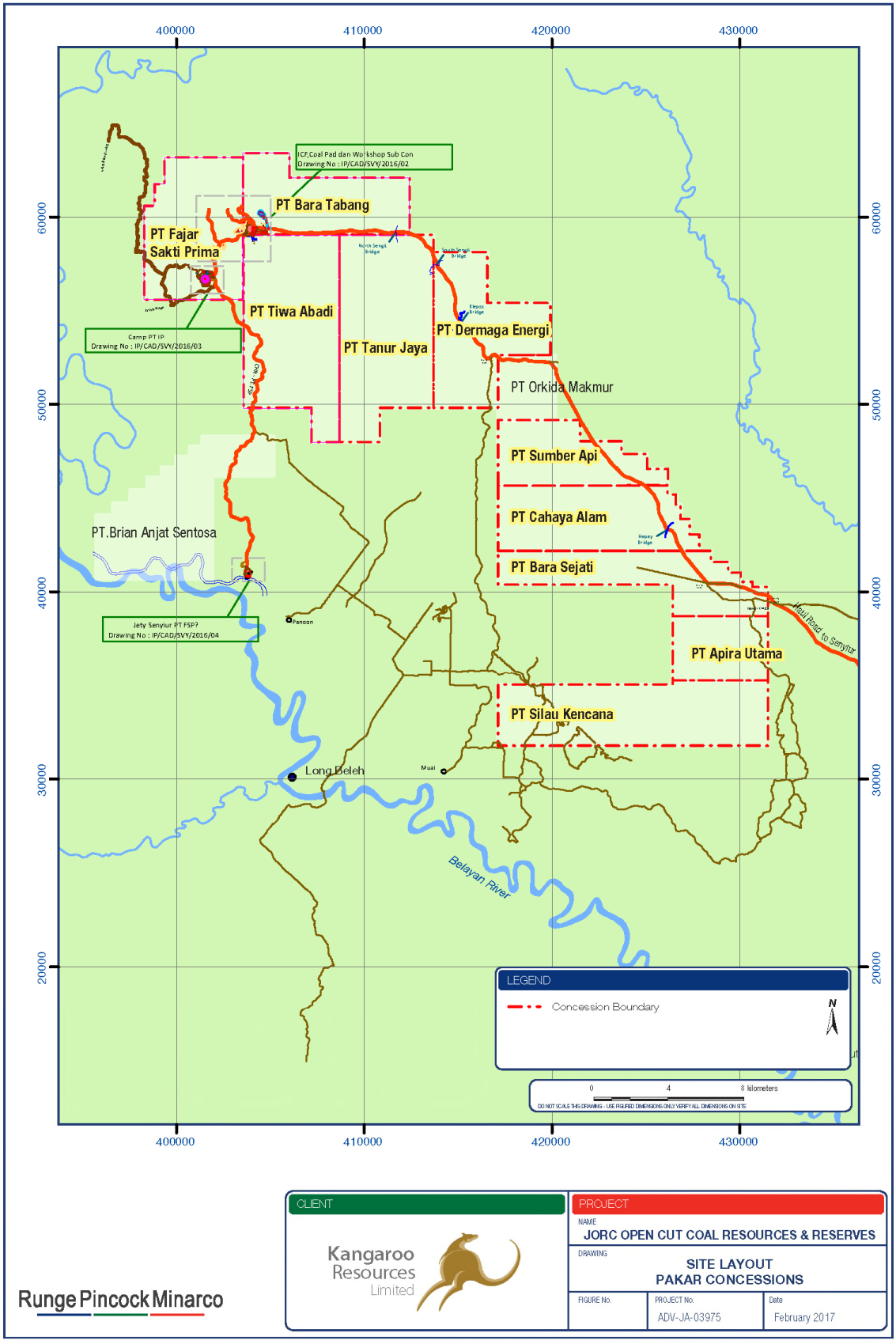
Due to the differentiation in geology, geography and coal quality, Pakar North and Pakar South are considered as separate material mining projects.

The Company has rights to utilize 30% of Bayan's haul road and barge loading capacity at Senyiur through an Access Agreement. Bayan's haul road passes either through or near to the majority of the Company's mining concessions in North and Pakar South.

Picture 1 – Geographic Location



Picture 2 – Site Location



2. STATEMENT OF COAL RESOURCES AND COAL RESERVES

2.1. Coal Resources

Table 1: - Coal Resources

JORC 2012 Code	Measured	Indicated	Inferred	Total	Total Moisture	Calorific Value	Ash	Total Sulphur	Inherent Moisture	Relative Density
as at 31 December 2016	Million Tonnes				% AR	Kcal/kg GAR	% ADB	% ADB	% ADB	In situ
Pakar North										
- PT. Tiwa Abadi	7	79	65	151	34.4	4,315	3.5	0.11	23.0	1.27
- PT. Tanur Jaya	103	105	181	389	38.8	3,970	4.9	0.12	19.3	1.24
- PT. Dermaga Energi	81	56	22	159	43.0	3,680	4.9	0.13	18.4	1.21
Sub-Total Pakar North	191	240	268	699	38.8	3,980	4.6	0.12	19.9	1.24
Pakar South										
- PT. Sumber Api	-	9	6	15	46.4	3,200	6.3	0.21	13.4	1.22
- PT. Cahaya Alam	-	99	56	155	48.4	3,140	5.9	0.21	13.3	1.21
- PT. Bara Sejati	-	185	36	221	49.6	3,020	6.0	0.19	13.2	1.19
- PT. Apira Utama	-	-	-	-	-	-	-	-	-	-
- PT. Silau Kencana	-	-	-	-	-	-	-	-	-	-
Sub-Total Pakar South	-	293	98	391	49.0	3,075	6.0	0.20	13.2	1.20
Total	**191**	**533**	**366**	**1,090**	**42.5**	**3,655**	**5.1**	**0.15**	**17.5**	**1.23**

Notes:

- Tonnages are estimated on an in-situ basis
- Mining method: Open Cut
- A minimum seam thickness of 0.5m was used in the estimation process
- The quality characteristics being Total Moisture ("**TM**"), Calorific Value, Ash, Total Sulphur ("**TS**"), Inherent Moisture ("**IM**") and Relative Density ("**RD**") for Pakar North, Pakar South and the Total have been calculated based on the weighted average total tonnages (i.e. sum of measured, indicated and inferred categories)
- GAR = Gross As Received, AR = As Received, ADB = Air Dried Basis
- Coal Resources are reported inclusive of Coal Reserves.
- All Mineral Resources figures reported in the table above represent estimates at 31 December 2016. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of available information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate. Rounding may cause some computational discrepancies.
- Coal Resources were reported for individual seams and have been rounded to 50kt for Measured, 100kt for Indicated and 200kt for Inferred Resources, and total Coal Resources by category are rounded to 1Mt to reflect the overall accuracy of the estimates.

2.2. Coal Reserves

Table 2: - Coal Reserves

JORC 2012 Code	Proved	Probable	Total	Total Moisture	Average Calorific Value	Ash	Total Sulphur	Relative Density
as at 31 December 2016	Million Tonnes			% AR	Kcal/kg GAR*	% ADB	% ADB	In situ
Pakar North								
- PT. Tiwa Abadi	3	58	61	34.9	4,250	3.6	0.10	1.26
- PT. Tanur Jaya	69	40	109	39.0	3,820	5.6	0.11	1.26
- PT. Dermaga Energi	55	11	66	42.6	3,660	4.1	0.09	1.22
Sub-Total Pakar North	127	109	236	38.9	3,885	4.7	0.10	1.25
Pakar South								
- PT. Sumber Api	-	5	5	46.7	3,100	5.1	0.14	1.23
- PT. Cahaya Alam	-	40	40	51.1	2,900	4.5	0.11	1.19
- PT. Bara Sejati	-	118	118	50.1	2,980	4.1	0.11	1.19
- PT. Apira Utama	-	-	-	-	-	-	-	-
- PT. Silau Kencana	-	-	-	-	-	-	-	-
Sub-Total Pakar South	-	163	163	50.2	2,965	4.2	0.11	1.19
Total	**127**	**272**	**399**	**43.6**	**3,510**	**4.5**	**0.11**	**1.23**

Notes:

- Mining method: Open Cut
- The coal produced is not washed resulting in 100% yield. Therefore, the Coal Reserve is equal to Marketable Reserve.
- The quality characteristics being Total Moisture, Calorific Value, Ash, Total Sulphur, Inherent Moisture and Relative Density for Pakar North, Pakar South and the Total have been calculated based on the weighted average total tonnages (i.e. sum of proved and probable)
- All Mineral Reserves figures reported in the table above represent estimates at 31 December 2016. Mineral Reserves estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate. Rounding may cause some computational discrepancies.
- The rounding of the Coal Reserve estimates is in accordance with the JORC Code which states: "Ore Reserve estimates are not precise calculations. Reporting of tonnage and grade figures should reflect the relative uncertainty of the estimate by rounding off to appropriately significant figures". In this regard, totals have been rounded to reflect the order of accuracy of estimates.
- GAR = Gross As Received, AR = As Received, ADB = Air Dried Basis

3. MINING, LOGISTICS AND INFRASTRUCTURE

The Bayan Group commenced mining the Tabang deposit, which is adjacent to the Pakar North deposit and part of the same geological structure in 2007 and, in March 2015, completed a major 69km haul road from the mining concessions area to the Senyiur port on the Kedang Kepala River. The Bayan Group is engaged in open cut mining of various coal quality from mines located primarily in East and South Kalimantan.

Serving as an integrated coal producer, the Bayan Group has its own coal loading infrastructure. It owns the largest coal terminal in Indonesia known as the Balikpapan Coal Terminal located in Balikpapan, East Kalimantan, with a throughput capacity of 15 million metric tonnes per annum and a stockpiling capacity of approximately one million tonnes across 16 stockpiles. It also operates a Floating Transfer-Station that can be moved to take advantage of the location with the greatest demand or to avoid bad weather and can be positioned to load capsize vessels.

The Company has contractual arrangements giving it the right to use Bayan's haul road and the Senyiur port. The Company and the Bayan Group are also parties to a strategic agreement for cooperation and support between the parties to enable the Tabang and Pakar projects to be co-developed in order to maximise use of the infrastructure and allow both the Company and the Bayan Group to optimise outputs and profitability from their respective concession areas. Under this strategic agreement, the Bayan Group will, at the Company's request, use their reasonable endeavours to provide, or procure the provision of, technical development services, mining services, project management services and management and administration services of a diverse and comprehensive nature as may be required to progress, develop and operate the Pakar concessions, as well as barging and transshipping services for the transport of the Company's product to an ocean-going ship anchorage.

3.1. Mining

The completion of the haul road allowed Bayan to expand production and in 2015, 2016 and 1H2017 it has produced 6.4, 6.1 and 6.4 million tonnes (annualized 12.8 Mt) respectively from the Tabang deposit. Bayan has primarily used mining contractors for overburden removal, coal extraction and coal hauling from the pit to established Run Of Mine ("**ROM**") Pads or the Intermediate Crushing Facility ("**ICF**"). In this regard, the mining and geology of this area is well understood, the mining contractors have a firm presence on site and the mining infrastructure has already been established.

3.2. Haul Road

Bayan has constructed a 69km all-weather coal haul road from the ICF in the Southwest corner of the PT. Bara Tabang concession to barge loading facilities located at Senyiur on the Kedang Kepala River. This coal haul road traverses the northern borders of the Pakar North concessions and the eastern borders of the Pakar South concessions

providing easy access for the transportation of the Company's coal when mining commences. The Company will only have to construct ROM pads near to its mining locations as well as extension roads to join into Bayan's haul road, which will be relatively small capital outlays. Bayan is in the process of asphalting this road to seal it and improve the running surface; this will reduce road maintenance costs in the long term and improve the productivity of the trucks running on it. This is expected to be complete in 2018.

3.3. Trucking

Bayan currently utilizes the services of 3 trucking contractors which are all well-established on site with camps, workshops and other supporting facilities. Trucks range in size from single prime mover, dual-trailer, 140t capacity trucks up to dual powered road trains with quad trailers and 300t capacity trucks. Two weighbridges capable of handling any of these trucks are currently under construction and are expected to be completed in Q4 2017. These contractors haul road from the ICF or ROM Pads to the Senyiur port barge loading facilities.

3.4. Senyiur Barge Loading Facilities

Bayan has constructed a significant barge loading facility at Senyiur on the Kedang Kepala River. This currently consists of 4 unloading hoppers, 3,000 tph of crushing capacity (there is another 2,000tph of crushing capacity at the ICF), 400,000 tonnes of stockpiling capacity and two barge loaders. In August 2017, Bayan completed the upgrade of the first barge loader from 2,000 tph to 4,000 tph so with the two barge loaders, the facilities have a combined loading rate of 8,000 tph. In addition to this, Bayan has constructed a fuel depot at this location which currently has 2 x 2,500kl diesel fuel storage tanks with another 2 x 2,500kl recently being committed to.

3.5. Coal Transshipment Barges

Bayan currently has two Coal Transshipment Barges ("**CTB**") that are located at the confluence point between the Kedang Kepala and Mahakam Rivers. In order to maximize barge efficiency these facilities are used to transfer coal from smaller 180 to 230 foot barges into 300 foot barges for the longer trip to the Balikpapan Coal Terminal ("**BCT**") or the Kalimantan Floating Terminal ("**KFT**"). CTB-1 has 2 x Liebherr unloading grab rope cranes rated at a combined capacity of 750 tph and CTB-2 has a single Ecrane grab hydraulic crane rated at 1,500 tph.

3.6. Balikpapan Coal Terminal

Bayan owns and operates the Balikpapan Coal Terminal, one of the largest coal terminals in Indonesia. The BCT currently has 4,000tph of unloading capacity, nearly 1 million tonnes of stockpiling capacity and a single shiploader rated at 4,000tph. The BCT's stockpiles are divided into separate units allowing coal of different quality to be

blended at shipload. Bayan is currently undertaking a Phase 4 expansion of the BCT to add a second shiploader to improve the number of vessels it can handle going forward.

3.7. Kalimantan Floating Terminal

Bayan owns and operates the Kalimantan Floating Terminal 2 which is positioned just offshore from Balikpapan and is designed to handle coal coming from the Tabang/Pakar complex. The facility has 4 Liebherr unloading rope grab cranes rated at 1,500 tph each, stockpiling capacity of approximately 60,000 tonnes and twin-ship loaders rated at 3,000 tph each.

3.8. Summary

Coal mining in Indonesia is heavily reliant on having the appropriate logistics in place. There are currently large deposits of coal in South Sumatra, the Wahau area in East Kalimantan and in Central Kalimantan however these deposits have not been exploited on any scale as there are no favourable logistics linking these areas to the coast. In this regard, by partnering with Bayan, the Company has ensured the viability of its Pakar projects as it will have access to the above facilities. This will enable the Company to commence mining without any significant capital expenditure other than further drilling and exploration, construction of new ROM Pads, the extensions of some roads to link into Bayan's haul road, the expansion of some infrastructure and leveraging off existing contractor relationships.

The key to all of the above is the obtaining of the appropriate permits to allow the Company to commence mining. The Company is currently working towards the goal of obtaining these permits with a view to starting production in Pakar North initially.

4. COAL RESOURCES – MATERIAL INFORMATION SUMMARY – PAKAR NORTH

1. Background

The Coal Resources estimates for Pakar North are supported by the JORC Code 2012 Table 1 (Sections 1 to 3) documents provided for in Appendix 4.

The following summary of information for the Coal Resource estimate is provided in accordance with Listing Rule 5.8 of the ASX Listing Rules.

2. Geology and geological interpretation

The geology of the entire Pakar resource is relatively simple being located on the western and eastern limb of a broad synclinal structure that plunges to the southeast. Pakar North occupies the northern part of the eastern and western limbs, and strata gently dip at up to 5 degrees. A number of significant faults have been identified in Pakar North from drill holes with apparent displacement up to 35m. These faults are interpreted in the TJ and DE concessions, which are both located to the east of the TA concession.

The coal seams are correlatable and continuous between and within the concessions that make up PT Bara Tabang and PT. Fajar Sakti Prima (collectively "**Tabang**" - PT Bayan Resources Tbk's operating coal mines) and the Pakar North area.

A total of up to 20 seams and sub-seams (or seam splits) have been identified in Pakar North. The T3, T4 and T7 seams are the main seams. It is noted that the majority of the seam groups consist of two sub seams and are subject to simple splitting. The average thickness of the seam groups on the respective concessions is summarized below:

Seam Group	Apparent Thickness (m) - Average		
	TA	TJ	DE
T9	-	1.4	2.0
T8	1.5	1.7	1.3
T7	5.7	9.4	10.0
T6B	0.2	-	-
T6	0.7	-	5.2
T5	1.2	1.8	1.5
T4B	0.7	-	-
T4	2.4	3.5	2.5
T3U	-	-	2.4
T3L	-	-	3.0

Seam Group	Apparent Thickness (m) - Average		
	TA	TJ	DE
T3	12.5	6.1	-
T2	4.4	-	-

The coal rank in the deposit can be categorized as lignite to sub-bituminous coal according to the ASTM standard. The coal quality is characterized by low CV, low ash content with a very low TS content. The overall rank increases with depth, with the lower seams having slightly lower moisture content and higher calorific value. There also appears to be a rank decrease trend from west to east-southeast with individual seams having lower moisture in the west increasing towards the east-southeast.

3. Sampling and sub-sampling techniques

Sampling of the core interval samples was undertaken at the drill site. Interval samples were identified and logged by the field geologists and then wrapped and sealed in plastic at the drill site before being transported to the camp for temporary storage until the drill hole was completed. All samples were transported to the laboratory by the geologist and final checks were performed to ensure the sample analyses results were received from the lab for each sample interval that was submitted.

4. Drilling techniques

Exploration in Pakar North was completed in 2009 using several drill rigs and was supervised by GMT Indonesia ("GMT"). There has been no additional drilling since 2009. Drilling has included open hole drilling and some partially cored holes. All drill holes were geophysically logged.

The Pakar North area has been subject to semi detailed drilling. The typical drill hole spacing is 200 to 250 m over the target areas, with detailed drilling at 100 to 150m spacing in the northeast of the TJ concession. Wide spaced drilling of up to 1,600m was completed in the southwest of TJ and TA. A summary of the drilling statistics is presented below:

Concession	Open Hole	Quality Hole	Geoph. Log Hole	Total Station Surveyed Hole
TA	9	2	11	11
TJ	55	69	124	124
DE	52	27	79	79
Total	**116**	**98**	**214**	**214**

5. Criteria used for classification

RPM considers that Pakar North can be categorized as a simple deposit due to the following:

- Dips are gentle, and the majority of the Coal Resource has a dominant shallow dip at less than 5 degrees;
- The coal quality is consistent across the project, no significant anomaly was identified; and
- The coal seams, particularly main seam groups on each block, can be easily recognized from their geophysical features and thickness. The main seam groups appear to maintain their total thickness throughout the Coal Resources area.

RPM used distinct Points of Observation for Coal Resource limit creation in Pakar North, based on the seam group continuity and consistency. The detail drill radius for resource classification is shown below:

Radius of Influence (m) Quantity			**Radius of Influence (m) Quality**		
Measured	Indicated	Inferred	Measured	Indicated	Inferred
250	500	750	500	1,000	1,500

6. Sample analysis method

The coal samples from the exploration work were sent and analyzed by PT. Geoservices in Balikpapan which is an internationally accredited laboratory.

For Pakar North, a total of 356 samples from 98 cored holes were processed by Geoservices for TM, Proximate, TS and CV. It is noted that only 221 samples were processed for density analysis.

A representative number of samples were also analysed for Hardgrove Grindability Index (HGI), Ash Fusion Temperature (AFT), Ultimate Analysis (UA) and Ash Analysis.

Moisture Holding Capacity (MHC) tests were also conducted for limited samples and the results compared against TM.

RPM performed basic statistical analysis to validate the consistency and reliability of the coal quality data using simple regressions.

7. Estimation methodology

The summary of the method employed to estimate Coal Resources can be described as follow:

- A geological model was created from the Tabang and Pakar North exploration results using ABB Stratmodel software. No quality restrictions were used and no thickness cut off was applied for the structural model. A topography limit was used, consequently the geological model was built only within the extent of the topographic data. No coal seams are modeled outside of the topography data coverage.

- A total of 356 representative samples have been analysed for TM in Pakar North. The average TM of the Pakar North area is 38.8%. The air dried density derived from laboratory analysis was recalculated as in-situ density using the Preston Sanders equation.

- Categorisation of the coal seams into the Measured, Indicated and Inferred categories was based on assessment of geological confidence.

- The Resource categorisation is made on a seam group basis.

- A valid mining permit/concession lease has also been used to limit the Coal Resource boundaries. It is noted that an area of 644 Hectares in the eastern part of the DE concession has been excluded due to a license dispute with another party.

- The estimation was based on the In-situ density of each seam basis by applying the Preston-Sanders formula to the density reported by the coal testing laboratory.

- A minimum seam thickness of 0.5 m was used in the estimation process.

- The Coal Resources were reported for individual seams and have been rounded to 50 kt for Measured, 100 kt for Indicated and 200 kt for Inferred resources, and total Coal Resources by category are rounded to 1 Mt to reflect the overall accuracy of the estimates.

8. Cut-off grade

No cut-off grade has been applied for Coal Resource estimation. It is noted that the coal quality in the Pakar North deposit is reasonable and RPM assumes that this coal can be sold to the market based on its quality. It is noted that RPM also completed a Life-Of-Mine ("**LOM**") analysis which confirms the viability of the deposit. RPM acknowledge that there are other coal mining concessions controlled by Bayan located nearby the Pakar South deposit with higher quality which can be utilized as a blending source to achieve a better energy for marketed product.

9. Mining and metallurgical methods, and other modifying factors

RPM have used the following parameters:

- Pakar North is located adjacent to the Tabang concessions which have produced 20 Mt of coal during the period 2011 to 2016. The Tabang mining operation has sufficient infrastructure that can be utilised by Pakar North.

- A minimum thickness of 0.5m has been applied in the Coal Resources estimation. RPM is of the opinion that the assumption is reasonable and common in mining practice.

- Maximum parting thickness of 0.1m has been applied and considered as part of the coal. RPM is of the opinion that the assumption is reasonable and a common mining practice in Kalimantan.

- The Coal Resources have been delineated by the tenure held by the Company with valid permits issued by the Indonesia Government. RPM is unaware of any material issues that will impede coal extraction within the limits.

- The mine optimisation results completed by RPM using a higher revenue factor have been used as the basis for Resource limits. RPM used a revenue factor approximately 30% higher than the Reserves base. The average depth of deep drilling was also used as a lower limit to the Resources limits, to ensure the continuity of coal seams within the selected optimization results. This resulted in an average in-situ strip ratio of approximately 5.9:1 for the whole Tabang and Pakar North area. In RPM's opinion, this strip ratio can be used as a basis to justify the reasonable prospect of eventual economic extraction using an open cut mine method for a long mine life (for at least the next 20 years). The deposit is proposed to be marketed as a thermal coal. Consideration would also be given to blending the coal with Bayan's coal deposits of higher quality.

- Both TA and TJ are currently in exploration status and will need to be upgraded to production status (IUP OP) in order to permit mining. The Company is currently working through this application process and does not foresee any issues in relation to upgrading the concessions. In this regard, no coal has been excluded from the concession areas as a result of their current status.

- A large portion of Pakar North is overlapped with forestry land for which the coal mining concessions will require a borrow-use permit (pinjam-pakai) to undertake any activities on that land including exploration and/or mining activities. The Company is of the opinion that these permits are a routine part of the process of mining coal in Indonesia and does not foresee any reason why

such permits could not be obtained. In this regard, no coal has been excluded from the concession areas as a result of overlaps with forestry concessions.

- A portion of TA is overlapped with a palm oil concession held by PT. Sasana Yudha Bhakti which we understand has been partially planted. The Company is of the opinion that a commercial settlement will be negotiated with PT. Sasana Yudha Bhakti in order to mine the coal and has made allowance in its cost assumptions for this. In this regard, no coal has been excluded from the concession areas as a result of overlaps with palm oil concessions.

- Approximately 17% (644 Hectares) of DE is overlapped with a third party coal mining concession for which there is an outstanding legal case. Due to the uncertainty surrounding this issue, RPM has excluded Coal Resources from this overlapped area in its estimates.

- DE currently does not have Clear and Clean Status. This issue has arisen as a direct result of the abovementioned legal suit and the Company believes that once this matter is resolved DE will be able to obtain Clear and Clean Status. In this regard, no coal has been excluded from the concession areas as a result of their current status.

5. COAL RESOURCES – MATERIAL INFORMATION SUMMARY – PAKAR SOUTH

1. Background

The Coal Resources estimates for Pakar South are supported by the JORC Code 2012 Table 1 (Sections 1 to 3) documents provided for in Appendix 4.

The following summary of information for the Coal Resource estimate is provided in accordance with Listing Rule 5.8 of the ASX Listing Rules.

2. Geology and geological interpretation

The geology of the entire Pakar resource is relatively simple being located on the western and eastern limb of a broad synclinal structure that plunges to the southeast. The Pakar South area occupies the southern part of the eastern limb, and within the concessions strata dip at 1 to 3 degrees to the south west. No faulting was identified although it is recognised that there may be minor faults with displacement less than 2m in the area. The coal seams in each of the Pakar South concessions are similar, and the major seams can be traced for over 6 km along strike. Although seam nomenclature between Pakar South and Pakar North are similar, no correlation has been attempted between the two areas due to limited drill hole data in the PT Orkida Makmur and PT Sumber Api concessions.

Thirty seams and sub-seams (or seam splits) have been identified in the Pakar South resource area. The average thickness of the main seams ranges from 4.2 to 10.2 m. In general the main seam groups can be distinguished into two series, the upper and lower series. The upper series are stratigraphically younger and developed in the western part of the concession, while the lower series are older and occupy the eastern part of Pakar South.

The average thickness of the seam groups on the respective concessions is summarized below:

Seam Group	Apparent Thickness (m) - Average		
	SA	CA	BS
T10U	-	-	5.6
T10	-	-	6.5
T9U	-	-	4.0
T9	-	3.8	4.2
T8	-	2.2	2.2
T7U	2.6	-	-
T7L	4.5	-	-
T7	-	8.9	10.5

Seam Group	Apparent Thickness (m) - Average		
	SA	CA	BS
T6	-	1.6	-
T5U	1.0	-	-
T5L	0.3	-	-
T5	-	1.5	1.6
T3B	0.8	0.6	0.8
T3	5.4	3.7	3.3
T2B	4.9	4.4	6.0
T2	6.6	6.6	8.0
T2A	6.7	8.1	-
T1U	-	-	0.8
T1L	-	-	1.7
T1	-	0.8	-

The coal is categorized as lignite according to the ASTM standard. The coal quality is characterized by low CV, low ash content with a low TS content. The overall coal rank increases with depth, with the lower seams having slightly lower moisture content and higher calorific value.

3. Sampling and sub-sampling techniques

Sampling of the core interval samples was undertaken at the drill site. Interval samples were identified and logged by the field geologists and then wrapped and sealed in plastic at the drill site before being transported to the camp for temporary storage until the drill hole was completed. All samples were transported to the laboratory by the geologist and final checks were performed to ensure the sample analyses results were received from the lab for each sample interval that was submitted.

4. Drilling techniques

Exploration in Pakar South area has been conducted in several stages. The first drilling was undertaken from 2005 to 2006, and was designed and supervised by SRK geologists. A total of 117 fully cored drill holes were completed, however only 60 drill holes were in the Pakar South concessions. All drill holes were supported with downhole geophysical log data. Drill hole collar coordinates were initially recorded by handheld GPS.

In 2008, additional drilling was conducted, mainly to intercept the main seam, T7. The drilling campaign completed 86 fully cored drill holes, with only 44 drill holes being located within the concessions. The majority of drill holes were supported by geophysical logging and collar coordinates were acquired by handheld GPS. At this stage, the Pakar South area has been subject to semi detail drilling with 500 m drill hole spacing.

Limited collar resurvey was recently acquired in 2016. A total of 40 drill hole collars were resurveyed across Pakar South concessions, with the majority being in the BS concession.

A summary of the drilling statistics in the Pakar South concessions is presented below:

Concession	Cored Hole	Quality Hole	Geoph. Log Hole	Total Station Surveyed Hole	Total
SA	6	3	6	1	6
CA	47	35	47	4	47
BS	51	38	47	35	51
Total	**104**	**76**	**100**	**40**	**104**

5. Criteria used for classification

RPM considers that Pakar South can be categorized as a simple deposit due to the following:

- Dips are gentle, and the majority of the Coal Resource has a dominant shallow dip at less than 5 degrees;
- The coal quality is consistent across the project, no significant anomaly was identified.
- The coal seams, particularly main seam groups on each block can be easily recognized from their geophysical features and thickness. The main seam groups can also maintain their total thickness throughout the Coal Resource area.
- A simple seam split commonly occurred within the seam groups; and
- No major faulting was identified across the deposit based on the existing data.

RPM used distinct Points of Observation for Coal Resource limit creation in Pakar South, based on the seam group continuity and consistency. The detail drill radius for resource classification is shown below:

Radius of Influence (m) Quantity			Radius of Influence (m) Quality		
Measured	Indicated	Inferred	Measured	Indicated	Inferred
250	500	750	500	1,000	1,500

6. Sample analysis method

The coal samples from the exploration work were processed by PT. Sucofindo, an internationally accredited laboratory.

In Pakar South, a total of 1,115 samples were processed by Sucofindo for Proximate, TS, CV and RD.

A representative subset of the samples was analysed for Ultimate Analysis, Ash Analysis, Ash Fusion Temperature, and Trace Elements.

RPM performed basic statistical analysis and regressions to validate the consistency and reliability of the coal quality data.

7. Estimation methodology

The summary of the method employed to estimate Coal Resources can be described as follow:

- A geological model was created for Pakar South exploration using ABB Stratmodel software. No quality restrictions were used and no thickness cut off was applied for the structural model. A topography limit was used, consequently the geological model was built only within the extent of the topographic data. No coal seams are modeled outside of the topography data coverage.

- Categorisation of the coal seams into the Measured, Indicated and Inferred categories was based on assessment of geological confidence.

- The Resource categorisation is made on a seam group basis.

- A valid mining permit/concession lease has also been used to limit the Resource boundaries. It is noted that an area of 1,585 Hectares in the eastern part of Pakar South has been excluded due to a license dispute with another party.

- The estimation was based on the In-situ density of each seam basis by applying the Preston-Sanders formula to the density reported by the coal testing laboratory.

- A minimum seam thickness of 0.5 m was used in the estimation process.

- The Resources were reported for individual seams and have been rounded to 50 kt for Measured, 100 kt for Indicated and 200 kt for Inferred resources, and total

Coal Resources by category are rounded to 1 Mt to reflect the overall accuracy of the estimates.

8. Cut-off grade

No cut-off grade has been applied for the Coal Resource estimation. The Pakar South area is a low strip ratio open cut area, located close to existing infrastructure operated by Bayan, however the energy of the coal is circa 3,000 Kcal/kg GAR. RPM assumes that this coal will find a niche market based on energy and price trade-offs. It is noted that RPM also completed a LOM analysis which confirm the viability of the deposit. RPM acknowledge that there are other coal mining concessions controlled by Bayan located nearby the Pakar South deposit with higher quality which can be utilized as a blending source to achieve a better energy for marketed product.

9. Mining and metallurgical methods, and other modifying factors

RPM have used the following parameters:

- A minimum thickness of 0.5 m has been applied in the Coal Resource estimation. RPM is of the opinion that the assumption is reasonable and common in mining practice.

- Maximum parting thickness of 0.1m has been applied that is considered as part of the coal. RPM is of the opinion that the assumption is reasonable and a common mining practice in Kalimantan.

- The Coal Resources have been delineated by the tenure held with valid permits issued by the Indonesian Government. RPM is unaware of any material issues that will impede coal extraction within the limits.

- The mine optimization results completed by RPM using a higher revenue factor have been used as the basis for Coal Resource limits. RPM used a revenue factor approximately 30% higher than the Reserves base. The average depth of deep drilling was also used as a lower limit to the Coal Resources limits, to ensure the continuity of coal seams within the selected optimization results. This resulted in an average in-situ strip ratio of approximately 3:1 for the whole Pakar South area. In RPM's opinion, this strip ratio can be used as a basis to justify the reasonable prospect of eventual economic extraction using open cut mine method a long mine life (for at least the next 20 years.

- SA is currently in exploration status and this will need to be upgraded to production status (IUP OP) in order to commence mining on this concession. The Company is currently working through this application process and does not foresee any issues in relation to upgrading the concession. In this regard,

no coal has been excluded from the concession areas as a result of their current status.

- A large portion of Pakar South overlaps with forestry land for which the coal mining concessions will require a borrow-use permit (pinjam-pakai) to undertake any activities on that land including exploration and/or mining activities. The Company is of the opinion that these permits are a routine part of the process of mining coal in Indonesia and does not foresee any reason why such permits cannot be obtained. In this regard, no coal has been excluded from the concession areas as a result of overlaps with forestry concessions.

- Approximately 18.6% of SA, 7.6% of CA and 4.5% of BS (totaling 1,585 Hectares) overlaps with a third party coal mining concession for which there is an outstanding legal case. Due to the uncertainty surrounding this issue, RPM has excluded any Coal Resources from this overlapped area.

- SA, CA and BS currently do not have Clear and Clean Status. This issue has arisen as a direct result of the abovementioned legal suit and the Company believes that once this matter is resolved these concessions will be able to obtain Clear and Clean Status. In this regard, no coal has been excluded from the concession areas as a result of their current status.

6. COAL RESERVES – MATERIAL INFORMATION SUMMARY – PAKAR NORTH

1. Background

The Coal Reserve estimates for Pakar North are supported by the JORC Code 2012 Table 1 document provided for in Appendix 4.

The following summary of information for the Coal Reserve estimate is provided in accordance with Listing Rule 5.9 of the ASX Listing Rules.

2. Economic assumptions

The coal price assumption was estimated from the historic long term price index and independent coal price forecasts. RPM is of the opinion that a price of USD$70 per tonne (based on 6,322 kcal/kg GAR) is reasonable and acceptable to be used as a benchmark price for this Coal Reserve estimation.

RPM has received tables of mining costs based on Bayan contracted rates and is of the opinion they are reasonable contracted cost assumptions based on its knowledge of similar mining operations in Indonesia.

Cost and revenue factors estimated for the Project were discussed with the Company and agreed to be used as input parameters for the optimisation process.

The following points summarise the cost and revenue factors respectively that were used for the estimate:

- All costs are in US dollars.
- A benchmark coal price of USD$70 per tonne based on CV of 6,322 kcal/kg GAR was used for the estimates. The revenue for the coal in the deposit was pro rata CV adjusted from the above and then a discount was applied (Pakar North 20%) as is typical of low rank/sub bituminous coal.
- Waste and coal mining cost of approximately USD$20 per tonne at the breakeven stripping ratio
- Coal crushing and stockpiling costs of approximately USD$1 per tonne.
- Administration, financing and marketing costs totaled approximately USD$3.4 per tonne.
- Barging and Balikpapan Coal Terminal costs of approximately USD$5.8 per tonne.
- Royalties of 5% of revenue less marketing, barging and shipping costs have been allowed.
- VAT 10% has been included.

A breakeven strip ratio (BESR) was estimated using costs and revenue factors based on the inputs.

The pit optimisation results were examined and then a pit shell selected by identifying the shell with the Incremental Stripping Ratio, (ISR), slightly lower than the breakeven Strip Ratio. A higher ISR than the BESR would mean the mining cost is greater than the revenue for the incremental slice of the pit. The selected pit shells were subsequently modified to form Practical or Mineable Pit Shells. This allows the pit shell to be refined to allow for practical considerations such as floor position, access restrictions and the removal of small areas that would be impractical to mine.

The incremental and break even stripping ratio for Pakar North is provided in the table below:

ISR (bcm/t)	BESR (bcm/t)
6.4	7.3

RPM has evaluated the sensitivity of coal quantity against a series of benchmark coal price changes. This evaluation estimated the change in BESR with each change in coal price. The revised BESR was then used to select the appropriate OPT shell with incremental SR lower than the BESR. Percentage variation of coal tonnage is then used to adjust the mineable quantity to create the sensitivity.

The amount of coal contained in the pit design may differ from the amount of coal in the selected OPT shell due to technical considerations in the process of creating the practical pit design. The shape of the practical pit design will differ from the OPT shell and may contain a different amount of mineable coal.

3. Criteria used for classification

Coal Reserves have been classified based on the confidence of the Coal Resources, the level of detail in the mine planning, and the level of risk associated with the project. All Measured Resources within the pit shell have been classified as Proved Reserves. Indicated Resources within the pit shell have been classified as Probable Reserves. No Inferred Coal Resources have been used to report Coal Reserve estimates.

4. Mining method, pit parameters and recovery factors

The proposed mining operation can be described as a “multi seam, shallow dip open cut coal mining operation in a strip mining and haulback or back fill configuration”. The plan is to develop the mines through the creation of initial box cut being hauled to adjacent ex-pit dumps. When the box cut is created and coal mined, with the waste then being haul backed into adjacent mined out areas. The dump areas will be rehabilitated

on an ongoing basis. The proposed open cut operations will use appropriately sized hydraulic excavators and trucks to mine the coal and waste. The Run of Mine, (ROM), coal will not be washed and will only be crushed to produce a final coal product. It is planned to produce a crushed ROM thermal coal for the export and domestic market.

The pit shell wall designed at overall dip slope projected from the pit crest to the variable pit basal floors. An overall slope of 40 degrees was applied in the optimisation process for the high wall and side wall, and 26 degree of overall slope was applied for the low wall. The optimisation base was limited at RL minus 125 as the geological confidence limit.

As the coal seams are not clearly defined and delineated from the waste in some areas, it is not practical to mine the interface between the waste and the coal without incurring some coal loss and waste contamination of the coal. There will be times when some coal is left unintentionally un-mined or which is mined as waste (loss) and other times when waste is mined as coal (dilution). The Modifying Factors applied to the Coal Resource model for deriving mining quantities were selected based on the use of excavators and trucks.

Loss and dilution factors guidelines are as follows:

- Roof and Floor Loss: It is assumed that 80 mm will be lost in the roof and 50 mm of coal will be lost in floor of all coal seams (i.e. total coal loss of 130 mm).
- Roof and Floor Dilution: It is assumed that 50 mm of waste material will be mined with the roof and 50 mm with the floor of all coal seams (i.e. total dilution of 100 mm).
- Minimum Mining Thickness: Minimum mining thickness of 1.0 m has been applied on all seams.
- Minimum Parting Thickness: Partings less than 0.3 m were assumed to be mined with the coal.
- Global Loss: It is assumed that 4% of all coal mined will be lost. This global allowance covers both geological and mining losses.

5. Coal processing method

ROM Coal would be trucked from the mine site and dumped onto a ROM stockpile using off-highway dump trucks. The coal would then be loaded onto multi-trailer trucks and transported to Bayan's Coal Processing Plant at Senyiur where it would be dumped into hoppers and crushed to between 50 and 70mm size.

The coal would then be stockpiled and ultimately loaded onto barges for transport along the Kedang Kepala and Mahakam Rivers to the Balikpapan Coal Terminal or to a Floating Terminal where it would be loaded onto customers' vessels.

The coal produced is not washed resulting in 100% yield. Therefore, Coal Reserve is equal to Marketable Reserve.

6. Cut-off grade

No cut-off grade has been applied for Coal Reserve estimation. RPM assumes that this coal can be sold to the market based on its quality. RPM also completed a LOM analysis which confirmed the viability of the deposit. RPM acknowledges that there are other coal mining concessions controlled by Bayan located nearby the Pakar North deposit with higher quality which can be utilized as a blending source to achieve a better energy for marketed product.

7. Estimation methodology

This updated Coal Reserve estimate is in line with Industry best practice standards and reported according to the guidelines set by the JORC Code, 2012 Edition.

This process includes defining viable pit limits and applying mining cost, revenue and other modifying factors to the Coal Resources to estimate Coal Reserves.

Coal Resources are reported inclusive of Coal Reserves.

8. Modifying factors

Both TA and TJ are currently in exploration status and will need to be upgraded to production status (IUP OP) in order to commence mining on these concessions. The Company is currently working through this application process and does not foresee any issues. In this regard, no coal has been excluded from the concession areas as a result of their current status.

A large portion of Pakar North overlaps with forestry land for which the coal mining concessions will require a borrow-use permit (pinjam-pakai) to undertake any activities on that land including exploration and/or mining activities. The Company is of the opinion that these permits are a routine part of the process of mining coal in Indonesia and does not foresee any reason why such permits cannot be obtained. In this regard, no coal has been excluded from the concession areas as a result of overlaps with forestry concessions.

A portion of TA is overlapped with a palm oil concession held by PT. Sasana Yudha Bhakti which we understand has been partially planted. The Company is of the opinion that it will be able to come to a commercial settlement with PT. Sasana Yudha in order to mine the coal and has made allowance in its cost assumptions for this. In this regard, no coal has been excluded from the concession areas as a result of overlaps with palm oil concessions.

Approximately 17% (644 Hectares) of DE overlaps with a third party coal mining concession for which there is an outstanding legal case. Due to the uncertainty surrounding this issue, RPM has excluded this overlap area for the estimation of Coal Reserves.

DE currently does not have Clear and Clean Status. This issue has arisen as a direct result of the abovementioned legal suit and the Company believes that once this matter is resolved DE will be able to obtain Clear and Clean Status. In this regard, no coal has been excluded from the concession areas as a result of their current status.

7. COAL RESERVES – MATERIAL INFORMATION SUMMARY – PAKAR SOUTH

1. Background

The Coal Reserve estimates for Pakar South are supported by the JORC Code 2012 Table 1 document provided for in Appendix 4.

The following summary of information for the Coal Reserve estimate is provided in accordance with Listing Rule 5.9 of the ASX Listing Rules.

2. Economic assumptions

The coal price assumption was estimated from the historic long term price index and independent coal price forecasts. RPM is of the opinion that a price of 70 USD/tonne (based on 6,322 kcal/kg GAR) is reasonable and acceptable to be used as a benchmark price for this study.

RPM has received tables of mining costs based on Bayan's contracted rates and is of the opinion they are reasonable contracted cost assumptions based on knowledge of similar mining operations in Indonesia.

Cost and revenue factors estimated for the Project were discussed with the Company and agreed to be used as input parameters for the optimisation process.

The following points summarise the cost and revenue factors respectively that were used for the estimate:

- All costs are in US dollars.
- A benchmark coal price of USD$70 per tonne based on CV of 6,322 kcal/kg GAR was used for the estimates. The revenue for the coal in the deposit was pro rata CV adjusted from the above and then a discount was applied (Pakar South 30%) as is typical of low rank/sub bituminous coal.
- Waste and coal mining cost of approximately USD$8.10 per tonne at the breakeven stripping ratio
- Coal crushing and stockpiling costs of approximately USD$1 per tonne.
- Administration, financing and marketing costs totaled approximately USD$3.4 per tonne.
- Barging and Balikpapan Coal Terminal costs of approximately USD$5.8 per tonne.
- Royalties of 5% of revenue less marketing, barging and shipping costs have been allowed.
- VAT 10% has been included.

A breakeven strip ratio (BESR) was estimated using costs and revenue factors based on the inputs.

The pit optimisation results were examined and then a pit shell selected by identifying the shell with the Incremental Stripping Ratio, (ISR), slightly lower than the breakeven Strip Ratio. A higher ISR than the BESR would mean the mining cost is greater than the revenue for the incremental slice of the pit. The selected pit shells were subsequently modified to form Practical or Mineable Pit Shells. This allows the pit shell to be refined to allow for practical considerations such as floor position, access restrictions and the removal of small areas that would be impractical to mine.

The incremental and break even stripping ratio for Pakar South is provided in the table below:

ISR (bcm/t)	BESR (bcm/t)
2.4	2.4

RPM has evaluated the sensitivity of coal quantity against a series of benchmark coal price changes. This evaluation estimated the change in BESR with each change in coal price. The revised BESR was then used to select the appropriate OPT shell with incremental SR lower than the BESR. Percentage variation of coal tonnage is then used to adjust the mineable quantity to create the sensitivity.

The amount of coal contained in the pit design may differ from the amount of coal in the selected OPT shell due to technical considerations in the process of creating the practical pit design. The shape of the practical pit design will differ from the OPT shell and may contain a different amount of mineable coal.

3. Criteria used for classification

Coal Reserves have been classified based on the confidence of the Coal Resources, the level of detail in the mine planning, and the level of risk associated with the project. There are no Measured Resource within the area therefore no Proved Reserve within the pit shell All Indicated Resources within the pit shell have been classified as Probable Reserves to reflect the preliminary stage of the project. No Inferred Resources have been used to estimate Coal Reserves.

4. Mining method, pit parameters and recovery factors

The proposed mining operation can be described as a “multi seam, shallow dip open cut coal mining operation in a strip mining and haulback or back fill configuration”. The plan is to develop the mines through the creation of initial box cut being hauled to adjacent ex-pit dumps. When the box cut is created and coal mined, with the waste then

being haul backed into adjacent mined out areas. The dump areas will be rehabilitated on an ongoing basis. The proposed open cut operations will use appropriately sized hydraulic excavators and trucks to mine the coal and waste. The Run of Mine, (ROM), coal will not be washed and will only be crushed to produce a final coal product. It is planned to produce a crushed ROM thermal coal for the export and domestic market.

The pit shell wall designed at overall dip slope projected from the pit crest to the variable pit basal floors. An overall slope of 45 degrees was applied in the optimisation process for the high wall and side wall, and 30 degrees of overall slope was applied for the low wall. The optimisation base was limited at RL minus 125 as the geological confidence limit.

As the coal seams are not clearly defined and delineated from the waste in some areas, it is not practical to mine the interface between the waste and the coal without incurring some coal loss and waste contamination of the coal. There will be times when some coal is left unintentionally un-mined or which is mined as waste (loss) and other times when waste is mined as coal (dilution). The Modifying Factors applied to the Coal Resource model for deriving mining quantities were selected based on the use of excavators and trucks.

Loss and dilution factors guidelines are as follows:

- Roof and Floor Loss: It is assumed that 80 mm will be lost in the roof and 50 mm of coal will be lost in floor of all coal seams (i.e. total coal loss of 130 mm).
- Roof and Floor Dilution: It is assumed that 50 mm of waste material will be mined with the roof and 50 mm with the floor of all coal seams (i.e. total dilution of 100 mm).
- Minimum Mining Thickness: Minimum mining thickness of 0.5 m has been applied on all seams.
- Minimum Parting Thickness: Partings less than 0.3 m were assumed to be mined with the coal.
- Global Loss: It is assumed that 4% of all coal mined will be lost. This global allowance covers both geological and mining losses.

5. Coal processing method

ROM Coal would be trucked from the mine site and dumped onto a ROM stockpile using off-highway dump trucks. The coal would then be loaded onto multi-trailer trucks and transported to Bayan's Coal Processing Plant at Senyiur where it would be dumped into hoppers and crushed to between 50 and 70mm size.

The coal would then be stockpiled and ultimately loaded onto barges for transport along the Kedang Kepala and Mahakam Rivers to the Balikpapan Coal Terminal or to a Floating Terminal where it would be loaded onto the customers' vessel.

The coal produced is not washed resulting in 100% yield. Therefore, Coal Reserve is equal to Marketable Reserve.

6. Cut-off grade

No cut-off grade has been applied for Coal Reserve estimation. RPM assumes that this coal can be sold to the market based on its quality. RPM also completed a LOM analysis which confirmed the viability of the deposit. RPM acknowledges that there are other coal mining concessions under Bayan control located nearby the Pakar South deposit with higher quality which can be utilized as a blending source to achieve a better energy for marketed product.

7. Estimation methodology

This updated Coal Reserve estimate is in line with Industry best practice standards and reported according to the guidelines set by the JORC Code, 2012 Edition.

This process includes defining viable pit limits and applying mining cost, revenue and other modifying factors to the Coal Resources to estimate Coal Reserves.

Coal Resources are reported inclusive of Coal Reserves.

8. Modifying factors

SA is currently in exploration status and this will need to be upgraded to production status (IUP OP) in order to commence mining on this concession. The Company is currently working through this application process and does not foresee any issues in relation to this. In this regard, no coal has been excluded from the concession areas as a result of their current status.

A large portion of Pakar South overlaps with forestry land for which our coal mining concessions will require a borrow-use permit (pinjam-pakai) to undertake any activities on that land including exploration and/or mining activities. The Company is of the opinion that these permits are a routine part of the process of mining coal in Indonesia and does not foresee any reason why such permits cannot be obtained. In this regard, no coal has been excluded from the concession areas as a result of overlaps with forestry concessions.

Approximately 18.6% of SA, 7.6% of CA and 4.5% of BS (totaling 1,585 Hectares) overlaps with a third party coal mining concession for which there is an outstanding legal case. Due to the uncertainty surrounding this issue, RPM has excluded this overlap area for the estimation of Coal Reserves.

SA, CA and BS currently do not have Clear and Clean Status. This issue has arisen as a direct result of the abovementioned legal suit and the Company believes that once this matter is resolved these concessions will be able to obtain Clear and Clean Status. In this regard, no coal has been excluded from the concession areas as a result of their current status.

8. GENERAL

8.1. Forward-looking assumptions

Preparation of the updated Coal Resources and Coal Reserves required the Competent Person to adopt certain forward-looking assumptions including coal price and mining cost assumptions. Long-term coal price assumptions are considered reasonable but may differ from actual prices. These types of forward-looking assumptions are necessarily subject to risks, uncertainties, and other factors, many of which are outside the control of the Company. For the avoidance of doubt, neither the Competent Person nor the Company makes any undertaking to subsequently update any forward-looking statements in this release to reflect events after the date of this release.

8.2. Competent Persons Statements

The information in this Report that relates to Coal Resources for the Pakar North and Pakar South Deposit is based on, and fairly represents, information and supporting documentation prepared by Mr. Oki Wijayanto Bsc (Geology) MAusIMM, MAIG, MIAGI who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Wijayanto is a full time employee of PT RungePincockMinarco. Mr Wijayanto has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Wijayanto consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

The information in this Report that relates to Coal Reserves for the Pakar North and Pakar South Deposit is based on, and fairly represents, information and supporting documentation prepared by Mr. I Gusti Made Sumardika Bsc (Mining) MAusIMM, Mperhapi who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Sumardika is a full time employee of PT RungePincockMinarco. Mr Sumardika has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Wijayanto consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

8.3. About Kangaroo

The Company's primary focus is creating shareholder value through the development and eventual production of thermal coal from the Pakar North, Pakar South and GPK projects in East Kalimantan, Indonesia.

Information on Kangaroo Resources Limited is available on the Company's website at:

www.kangarooresources.com

For further information, please contact:

T: +61 8 9381 4320
info@kangarooresources.com

APPENDIX 1 Comparison to previously reported Coal Resources and Coal Reserves

This section compares the current Statements dated 31 December 2016 prepared under the 2012 JORC Code to the previous Statement of Open Cut Coal Resources and Coal Reserves as at 31 December 2010 prepared under the 2004 JORC Code.

The current Coal Resources and Coal Reserves as at 31 December 2016 compared to the prior estimate as at December 2010 shows a decrease in Coal Resources of 1,929Mt (80Mt increase in Measured, 559Mt decrease in Indicated and 1,450Mt decrease in Inferred) and a decrease in Coal Reserves of 43Mt (111Mt increase in Proved, 154Mt decrease in Probable).

The table below summarizes the variances in Coal Resources:

JORC 2012 Code	Measured	Indicated	Inferred	Total	Total Moisture	Calorific Value	Ash	Total Sulphur
as at 31 December 2016	Million Tonnes				% AR	Kcal/kg GAR	% ADB	% ADB
Pakar North								
- PT. Tiwa Abadi	7	79	65	151	34.4	4,315	3.5	0.11
- PT. Tanur Jaya	103	105	181	389	38.8	3,970	4.9	0.12
- PT. Dermaga Energi	81	56	22	159	43.0	3,680	4.9	0.13
Sub-Total Pakar North	191	240	268	699	38.8	3,980	4.6	0.12
Pakar South								
- PT. Sumber Api	-	9	6	15	46.4	3,200	6.3	0.21
- PT. Cahaya Alam	-	99	56	155	48.4	3,140	5.9	0.21
- PT. Bara Sejati	-	185	36	221	49.6	3,020	6.0	0.19
- PT. Apira Utama	-	-	-	-	-	-	-	-
- PT. Silau Kencana	-	-	-	-	-	-	-	-
Sub-Total Pakar South	-	293	98	391	49.0	3,075	6.0	0.20
Total	**191**	**533**	**366**	**1,090**	**42.5**	**3,655**	**5.1**	**0.15**

JORC 2004 Code	Measured	Indicated	Inferred	Total	Total Moisture	Calorific Value	Ash	Total Sulphur
as at 31 December 2010	Million Tonnes				% AR	Kcal/kg GAR	% ADB	% ADB
Pakar North								
- PT. Tiwa Abadi	-	-	-	-	-	-	-	-
- PT. Tanur Jaya	59	107	131	297	39.1	3,930	5.2	0.13
- PT. Dermaga Energi	52	94	41	187	43.3	3,597	5.7	0.13
Sub-Total Pakar North	111	201	172	484	40.7	3,800	5.4	0.13
Pakar South								
- PT. Sumber Api	-	34	89	123	46.3	3,205	6.1	0.20
- PT. Cahaya Alam	-	285	447	732	47.8	3,155	5.5	0.22
- PT. Bara Sejati	-	466	778	1,244	48.9	3,080	5.7	0.18
- PT. Apira Utama	-	89	292	381	50.4	2,990	5.8	0.19
- PT. Silau Kencana	-	17	38	55	51.9	2,985	4.1	0.23
Sub-Total Pakar South	-	891	1,644	2,535	48.7	3,090	5.6	0.20
Total	**111**	**1,092**	**1,816**	**3,019**	**47.5**	**3,205**	**5.6**	**0.18**

Variance	Measured	Indicated	Inferred	Total	Total Moisture	Calorific Value	Ash	Total Sulphur
	Million Tonnes				% AR	Kcal/kg GAR	% ADB	% ADB
Pakar North								
- PT. Tiwa Abadi	7	79	65	151	34.4	4,315	3.5	0.11
- PT. Tanur Jaya	44	(2)	50	92	(0.3)	40	(0.3)	(0.01)
- PT. Dermaga Energi	29	(38)	(19)	(28)	(0.3)	83	(0.8)	-
Sub-Total Pakar North	80	39	96	215	(1.9)	180	(0.8)	(0.01)
Pakar South								
- PT. Sumber Api	-	(25)	(83)	(108)	0.1	(5)	0.2	0.01
- PT. Cahaya Alam	-	(186)	(391)	(577)	0.6	(15)	0.4	(0.01)
- PT. Bara Sejati	-	(281)	(742)	(1,023)	0.7	(60)	0.3	0.01
- PT. Apira Utama	-	(89)	(292)	(381)	(50.4)	(2,990)	(5.8)	(0.19)
- PT. Silau Kencana	-	(17)	(38)	(55)	(51.9)	(2,985)	(4.1)	(0.23)
Sub-Total Pakar South	-	(598)	(1,546)	(2,144)	0.3	(15)	0.3	0.00
Total	**80**	**(559)**	**(1,450)**	**(1,929)**	**(5.0)**	**450**	**(0.5)**	**(0.04)**

The primary reasons for the variations in Coal Resources are:

- Change to the radii of points of observation between the two JORC statements particularly in Pakar North due to additional drilling in the adjacent concessions of Bayan;
- No Coal Resources were reported for Tiwa Abadi concession as at 31 December 2010;
- RPM applied pit optimisation limits to Coal Resource estimates to satisfy JORC Code 2012 requirement for reasonable prospects for eventual economic extraction;
- Relinquishment of part of the concession areas of AU, BS and SK totaling 5,118 hectares in Pakar South as a result of the overlap with PT. Aditya Kirana Mandiri ("AKM") in accordance with the Company's announcement dated 21 December 2016. No Coal Resources are reported in AU or SK as at 31 December 2016; the main reason is that AU overlapped significantly with AKM and therefore due to the relinquishment has resulted in only 3 drill holes remaining in AU (one of them is a barren hole), therefore no Coal Resources are reported. For SK itself there is only 1 drill hole on the concession. Previous resources in SK resulted from extrapolation from an area within AU that has now been relinquished (currently AKM);
- Exclusion of areas totaling 2,229 Hectares subject to the legal action involving PT. Senyiur Sukses Pratama ("**SSP**"). The status of the legal action was last reported in detail in the June 2017 Quarterly Activities Report lodged with the ASX on 31 July 2017 and a subsequent update was released to the market on 22 August 2017; and
- Geological model update which incorporated additional drill data, seam re-correlation, collar resurvey and update for detailed topography data. Areas without detailed topography were excluded;

The table below summarizes the variances in Coal Reserves:

JORC 2012 Code	Proved	Probable	Total	Total Moisture	Average Calorific Value	Ash	Total Sulphur
as at 31 December 2016	Million Tonnes			% AR	Kcal/kg GAR*	% ADB	% ADB
Pakar North							
- PT. Tiwa Abadi	3	58	61	34.9	4,250	3.6	0.10
- PT. Tanur Jaya	69	40	109	39.0	3,820	5.6	0.11
- PT. Dermaga Energi	55	11	66	42.6	3,660	4.1	0.09
Sub-Total Pakar North	127	109	236	38.9	3,885	4.7	0.10
Pakar South							
- PT. Sumber Api	-	5	5	46.7	3,100	5.1	0.14
- PT. Cahaya Alam	-	40	40	51.1	2,900	4.5	0.11
- PT. Bara Sejati	-	118	118	50.1	2,980	4.1	0.11
- PT. Apira Utama	-	-	-	-	-	-	-
- PT. Silau Kencana	-	-	-	-	-	-	-
Sub-Total Pakar South	-	163	163	50.2	2,965	4.2	0.11
Total	**127**	**272**	**399**	**43.6**	**3,510**	**4.5**	**0.11**

JORC 2004 Code	Proved	Probable	Total	Total Moisture	Average Calorific Value	Ash	Total Sulphur
as at 31 December 2010	Million Tonnes			% AR	Kcal/kg GAR*	% ADB	% ADB
Pakar North							
- PT. Tiwa Abadi	-	-	-	-	-	-	-
- PT. Tanur Jaya	16	93	109	39.3	3,830	6.9	0.14
- PT. Dermaga Energi	-	46	46	42.4	3,670	5.9	0.13
Sub-Total Pakar North	16	139	155	40.2	3,785	6.6	0.14
Pakar South							
- PT. Sumber Api	-	31	31	46.3	3,140	5.0	0.13
- PT. Cahaya Alam	-	180	180	46.6	3,150	4.7	0.15
- PT. Bara Sejati	-	63	63	48.7	3,020	4.2	0.11
- PT. Apira Utama	-	12	12	48.4	3,020	4.4	0.14
- PT. Silau Kencana	-	1	1	49.5	3,070	3.1	0.11
Sub-Total Pakar South	-	287	287	47.1	3,115	4.6	0.14
Total	**16**	**426**	**442**	**44.7**	**3,350**	**5.3**	**0.14**

Variance	Proved	Probable	Total	Total Moisture	Average Calorific Value	Ash	Total Sulphur
	Million Tonnes			% AR	Kcal/kg GAR*	% ADB	% ADB
Pakar North							
- PT. Tiwa Abadi	3	58	61	34.9	4,250	3.6	0.10
- PT. Tanur Jaya	53	(53)	-	(0.3)	(10)	(1.3)	(0.03)
- PT. Dermaga Energi	55	(35)	20	0.2	(10)	(1.8)	(0.04)
Sub-Total Pakar North	111	(30)	81	(1.3)	100	(1.9)	(0.04)
Pakar South							
- PT. Sumber Api	-	(26)	(26)	0.4	(40)	0.1	0.01
- PT. Cahaya Alam	-	(140)	(140)	4.5	(250)	(0.2)	(0.04)
- PT. Bara Sejati	-	55	55	1.4	(40)	(0.1)	-
- PT. Apira Utama	-	(12)	(12)	(48.4)	(3,020)	(4.4)	(0.14)
- PT. Silau Kencana	-	(1)	(1)	(49.5)	(3,070)	(3.1)	(0.11)
Sub-Total Pakar South	-	(124)	(124)	3.1	(150)	(0.4)	(0.03)
Total	**111**	**(154)**	**(43)**	**(1.1)**	**160**	**(0.8)**	**(0.03)**

The primary reasons for the variations in Coal Reserves are:

- The Coal Reserves in the current Statements are based on a long-term Newcastle coal price of free on board USD$70 per metric tonne (6,322 Kcal/kg GAR) versus a USD$95 per metric tonne price as per the December 2010 statements;
- Coal production costs have been modified based on updated costs;
- Updated geological model;
- Updated Coal Resource boundaries; and
- Cut off topography as of 30 November 2016

APPENDIX 2 Concession Summary

Concession	Current Permit Type	Suspended until[4]	Remaining Permit Period[4,7,8]	Total Concession Area (Ha)	Non-Forestry Area (Ha)[5]	Foresty Area (Ha)[5]	Overlap with SSP[3,6] (Ha)	Status
TA	Exploration (Suspended)	29-Oct-17	4 months	4,996[1]	3,480[2]	1,516	-	Clear and Clean
TJ	Exploration (Suspended)	29-Oct-17	4 months	5,000	-	5,000	-	Clear and Clean
DE	Exploration (Suspended)	29-Oct-17	4 months	3,784	-	3,784	644	Not yet Clear and Clean
Pakar North				**13,780**	**3,480**	**10,300**	**644**	
OM	Exploration (Suspended)	29-Oct-17	4 months	1,061	-	1,061	748	Clear and Clean
SA	Exploration (Suspended)	29-Oct-17	4 months	2,364	-	2,364	440	Not yet Clear and Clean
CA	Production	n/a	to 5 June 2028	3,457	-	3,457	264	Not yet Clear and Clean
BS	Production (Suspended)	24-Nov-17	11 yrs 6 mths	2,981	-	2,981	133	Not yet Clear and Clean
AU	Production (Suspended)	10-Jul-18	11 yrs 7 mths	1,714	-	1,714	-	Clear and Clean
SK	Exploration (Suspended)	31-Aug-17	6 months	4,774	1,736	3,038	-	Clear and Clean
Pakar South				**16,351**	**1,736**	**14,615**	**1,585**	
TOTAL				**30,131**	**5,216**	**24,915**	**2,229**	

Footnotes:

[1] On 13th July 2017, PT Tiwa Abadi's concession was reduced by 4 hectares as the coordinates in the concession documents revealed it had a minor overlap with the adjacent PT. Tanur Jaya which is also controlled by the Company.

[2] Approximately 1,711 Hectares of the 3,484 Hectares of non-forestry land is overlapped with a palm oil concession held by PT. Sasana Yudha Bhakti, a subsidiary of R.E.A. Holdings Plc.

[3] As reported in the Company's quarterly reports, this overlap is the subject of a legal suit between PT. Senyiur Sukses Pratama ("SSP") and the provincial government of East Kalimantan. The Company, through OM, intervened in this case. In April 2017, the Administrative Court in Samarinda ruled in favour of SSP finding that the instruction by the East Kalimantan government requiring SSP to relinquish certain overlapping areas was invalid. In April 2017, both the East Kalimantan government and OM appealed this decision which will be heard by the Jakarta Administrative High Court. In August 2017, on appeal, the decision of the Administrative Court in Samarinda has been overturned. The status of the legal action was last reported in detail in the June 2017 Quarterly Activities Report lodged with the ASX on 31 July 2017 and a subsequent update was released to the market on 22 August 2017. On 30 August 2017, SSP lodged an appeal against the decision of the Jakarta Administrative High Court to the Supreme Court of Indonesia.

[4] The period remaining on the permit will commence on the date the suspension is released. The Company may apply for additional suspensions at the expiration of the current suspension period. Suspensions are typically given for a 1 year period.

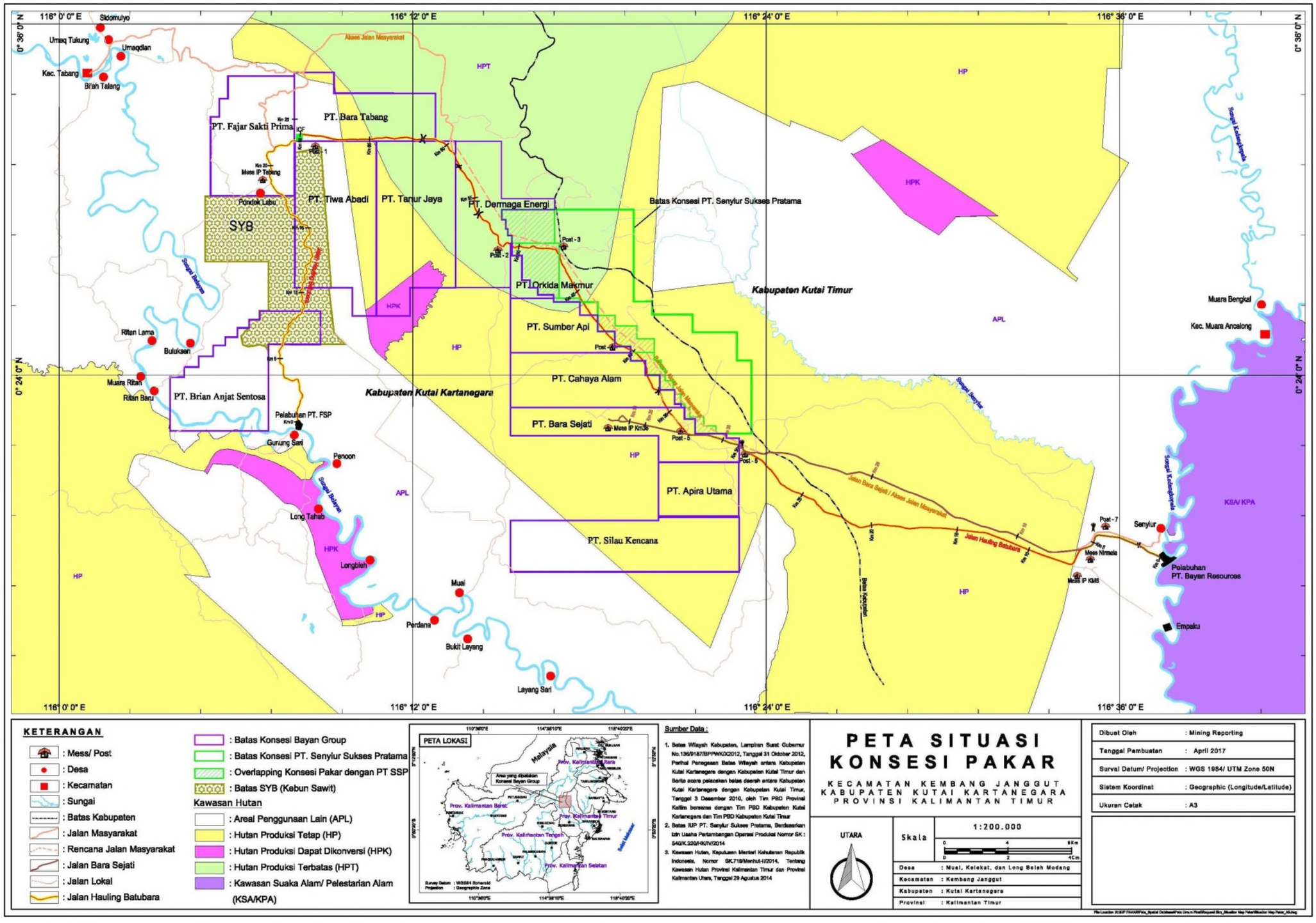
[5] The Non-Forestry and Forestry areas are inclusive within the Total Concession Area and not in addition to.

[6] The overlap with SSP is inclusive within the Total Concession Area. All of the overlap exists within the Forestry area and therefore is included within this figure.

[7] Production Status mining concessions (Izin Usaha Pertambangan Operasi Produksi– IUP OP) in Indonesia are issued for a period of 20 years and have 2x 10 year extension options. The production concessions here are all part way through their first 20 year period and therefore the 2x 10 year extension options remain.

[8] Exploration Status mining concessions (Izin Usaha Pertambangan Eksplorasi) in Indonesia are issued for a period of 7 years. The exploration concessions here are all nearing the end of their permit lives and hence have currently been suspended. Exploration concessions would typically be upgraded into Production Status mining concessions which would be issued for a period of 20 years and have 2x 10 year extension options

APPENDIX 3 Concession Locations



APPENDIX 4 Table 1 JORC Compliance Check Lists

PT Dermaga Energi

Appendix 4A
Table 1 JORC Compliance Check List For Resources and Exploration

Section 1 Sampling Techniques and Data

Criteria	JORC Explanation	Commentary

Sampling techniques	• Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.
	• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.
	• Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.
		• Core sampling for coal quality work took place using HQ (63mm) core. Coal core samples were sent to the laboratory with chain of custody paperwork.
		• Open hole drilling was also used with chip samples of cuttings and logged by the rig geologist. These chip samples were not analysed and used in quality modelling.
		• A suite of downhole geophysical surveys, including Density, Gamma, and Calliper were typically run in the majority of drill holes. No drill hole deviation was completed due to vertical drilling. The geophysical logging was carried out by external contractor and subject to their internal calibration, quality assurance and quality control procedures. Geophysical logs were acquired to supplement the geologist's lithological description of the cores to:
		  • assist with ensuring that the core recoveries were satisfactory (> 90%); and,
		  • assist with correlation of the various seams and to demonstrate continuity of seam character.

Drilling techniques	• Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	• PCD bits using air and water are used to complete the open hole sections of drill holes. • Use of HQ-3 (triple tube barrel) follows Industry accepted Standards for acquisition of borecore.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may	• Linear drill hole core recovery was measured for all coal quality drill holes on a run by run basis. Actual recovered core lengths are measured with a tape measure and any core loss is recorded in geological logs, coal quality sample intervals and in the run by run drilling record field sheets.

	have occurred due to preferential loss/gain of fine/coarse material.	• Core holes were redrilled when poor core recovery had potential to materially affect the coal quality models (in general, this is where recovery was less than 90%). • No sample bias was identified in the current model database.
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. • The total length and percentage of the relevant intersections logged.	• A drill site geologist was present at all times during drilling operations. • Preliminary core logs were derived from lithological logging of open hole chip "cuttings" and logging of drill core. • All holes were lithologically logged. The logging of the chip/cuttings and core samples is qualitative and detailed which includes a record of the recovery of the total length and the cored length, rock type, stratigraphic unit and numerous adjectives to describe the sample in terms of colour, grain size, bedding etc. all of which is entirely sufficient to describe the various lithologies and coal samples to support the coal resource estimation from a geological, geotechnical and coal quality consideration. Field drill logs and field coal sample depths were subsequently reconciled against the geophysical logs whenever available. Barren holes were used to limit coal continuity.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain	• No splitting of core is undertaken in the field. Sample preparation was done in PT Geoservices laboratory. • Coal samples were wrapped and sealed immediately once core logging was completed to minimise moisture loss to ensure the samples were representative of the in situ moisture. • The coal samples collected for quality modelling were from HQ core size (63mm). This core size provides sufficient sample mass for testing of raw coal parameters.

	size of the material being sampled.	
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	• The samples were submitted to PT Geoservices laboratory for analysis. The laboratory is internationally accredited and all analyses were conducted in accordance with appropriate international standards • Most of coal plies have been subjected to a proximate analysis (which includes IM, Ash, VM, FC), TM, TS and CV. • No QAQC was performed directly by DE. It is expected that such a thorough QAQC was performed by PT. Geoservices as accredited external laboratories.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• The logging and sampling was conducted by PT GMT Indonesia geologists, a sub-contractor acting on behalf of PTRI. The majority of core samples were acquired using the “touch cored” and “twinned cored” holes method. The samples depths were adjusted using geophysical log data. There are also several geotechnical holes which were drilled as fully cored holes. • The protocols for sample acquisition, data entry, and data verification were developed by PTRI. The assaying was completed by external accredited laboratory. • No adjustment was made to the assay data. A more detail discussion is available in the **Section 5.7** and **Section 6.2** of the DE JORC Statement
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• All of drill hole collars were surveyed by Total Station. The topography was derived from combination of high precision aerial survey (LIDAR). • The Project is using UTM 50N grid system. • The benchmarks were derived from high precision Geodetic GPS which tied to the Government survey control.
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade	• Drill hole line spacing is typically 200-250 m in most of the areas, and 100-150 m detail drilling in the northeast of TJ

	continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• This is considered adequate for classification of Coal Resources to Measured and Indicated category with due consideration for the variance in coal seam thickness, coal quality and structural complexity. • Sample compositing to a seam basis has been applied whenever the samples were based on ply by ply basis.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• The geological data including samples, was gathered based on vertical drilling with some being supported with geophysical logging.
Sample security	• The measures taken to ensure sample security.	• All core and cuttings were geologically described by qualified field geologists. • Coal samples were stored in core trays on site. Samples were taken form the core boxes and bagged in plastic bags with hole and sample number, and sent to the external laboratories once sampling instructions were completed. • All sampling and sample labelling was undertaken by or supervised by the field geologist. • Samples were packed, handled and transported with normal care, documentation and chain of custody • Coal is a bulk commodity so no high level security measures are deemed necessary since it is very unlikely to be subject to systematic material impact from sample tampering, theft or loss.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• Sampling and data acquisition procedures were reviewed by RPM at the time of the 2016 site visit, which confirming that the exploration approach being used is acceptable for Resource reporting purposes.

Section 2 Reporting of Exploration Results

Criteria	JORC Explanation	Commentary

Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. • The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• All concessions have valid IUP (mining lease), documentation. No material issues were identified regarding this matter. • The project is in operating stage with valid license. No issue to operate in the area.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• To the RPM's knowledge, no exploration was completed by other parties other than DE.
Geology	• Deposit type, geological setting and style of mineralisation.	• The Project concessions are within thick, multi seam deposits that occur within the Miocene Age Balikpapan Formation of the Kutai Basin. The structure of the deposit area is overlying the northern and western limb of a broad synclinal structure plunging to the southeast, with dips ranges of 1 to 5 degree.
Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually material and should be reported. • Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• Samples are composited by weighting by mass if the samples were taken on ply by ply basis. No maximum and/or minimum cut-off were used in the modelling and estimation process.
Relationship between mineralisation widths and intercept length	• These relationship are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. • If it is not known and only down hole lengths are reported, there should be a clear statement to this effect e.g. 'down hole length, true width not known)	• The geometry of the deposit is reasonably understood. This was based on the drill hole data and other geological information (regional and local mapping results). • Detail seam thicknesses are reported in apparent thickness and provided in the Appendix C of the DE JORC Statement.
Drill hole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material	• A total of 1,242 holes covers BT, FSP, and Pakar North concessions were used for modelling. All holes in Pakar North were geophysically logged with coring

	drill holes: • easting and northing of the drill hole collar • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar • dip and azimuth of the hole • down hole length and interception depth • hole length. • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	for the representative holes and potential seams. • A more detail drill holes information, including location, seam thickness, depth and quality were provided in a separate file.
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• Maps and sections are provided in the report in the figures and appendices.
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• All information provided by Client including exploration results has been reviewed. This report references all available exploration results from the Client up to the commencement date of the Resource estimation.
Other substantive exploration data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	• Geotechnical and hydrogeological studies were completed, with the results of those studies being incorporated for mine planning purposes.
Further work	• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• Future drilling is planned within the target area (LOM area) to increase confidence level and model accuracy.

Section 3 Estimation and Reporting of Mineral Resources

Criteria		Commentary

Database integrity	• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.
	• Data validation procedures used.
		• DE is using Microsoft Excel as the main geological database storage. To minimise errors in the database, several main steps were applied:
		  • coal seam data entered into the geological database was reconciled against the logs whenever available.
		  • There are a number of underlying "business rules" built into the database that help insure consistency and integrity of data including, but not limited to:
		  • relational link between geological, down hole geophysical and coal quality data;
		  • restriction of data entry to the interval of the defined hole depth;
		  • basic statistics such as histogram for major quality parameters (CV, Ash & TS) and cross plots (CV, Ash & RD) to ensure data consistency and understanding errors if any; and,
		  • basic coal quality integrity checks such as ensuring data is within normal range limits, that proximate analyses add to 100 percent etc.
		  • Seam and stratigraphic picks and correlations were independently checked and rechecked by senior geological staff of RPM. After modelling, anomalous seam and interburden structure and thicknesses were interrogated and errors iteratively corrected from the database.
		• It is highly unlikely that there is significant corrupt data in the database, given the validation procedures above.
		• Some errors may still pass through to the geological

		and coal quality models, considering that coal is a bulk commodity of relative even consistency and the large number of drill holes on which the resource is based, such errors are unlikely to have a material impact on the resource estimate.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• The site visit has been undertaken by RPM senior Consultant (Mr. Gusti Sumardika) in December 2016. Mr. Gusti Sumardika is permanent employee of RPM and also a Competent Person Indonesia (CPI). The exploration is completed to a reasonably high standard. No major issues were identified.
Geological interpretation	• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. • Nature of the data used and of any assumptions made. • The effect, if any, of alternative interpretations on Mineral Resource estimation. • The use of geology in guiding and controlling Mineral Resource estimation. • The factors affecting continuity both of grade and geology.	• Geological interpretation was based on the drilling data with limited support of geophysical log information. • DE also used the regional and local mapping results to support the geological interpretation of the deposit • The confidence level of the deposit was determined based on the data distribution and geological complexity. • All necessary constraints which affect continuity of the coal seams were considered.
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	• The deposit covers area approx. 3,500 ha, with an approximate strike length of 6 km and approximate width 6 km.
Estimation and modelling techniques	• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. • The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. • The assumptions made regarding recovery of by-products. • Estimation of deleterious elements or other non-grade variables of economic significance (e.g.	• A three dimensional computer models were built using ABB MineScape software. Extrapolation distances for Coal Resource estimation were based on geological continuity (seam thickness, quality and structure). • Check estimates were undertaken by other competent geologist within RPM group to ensure the validity of the result. • The models were based on gridded modelling approach. • No selective mining unit assumptions were used for modelling processes. • Model validation was undertaken by visually inspecting the model sections, structure and quality contour, etc.

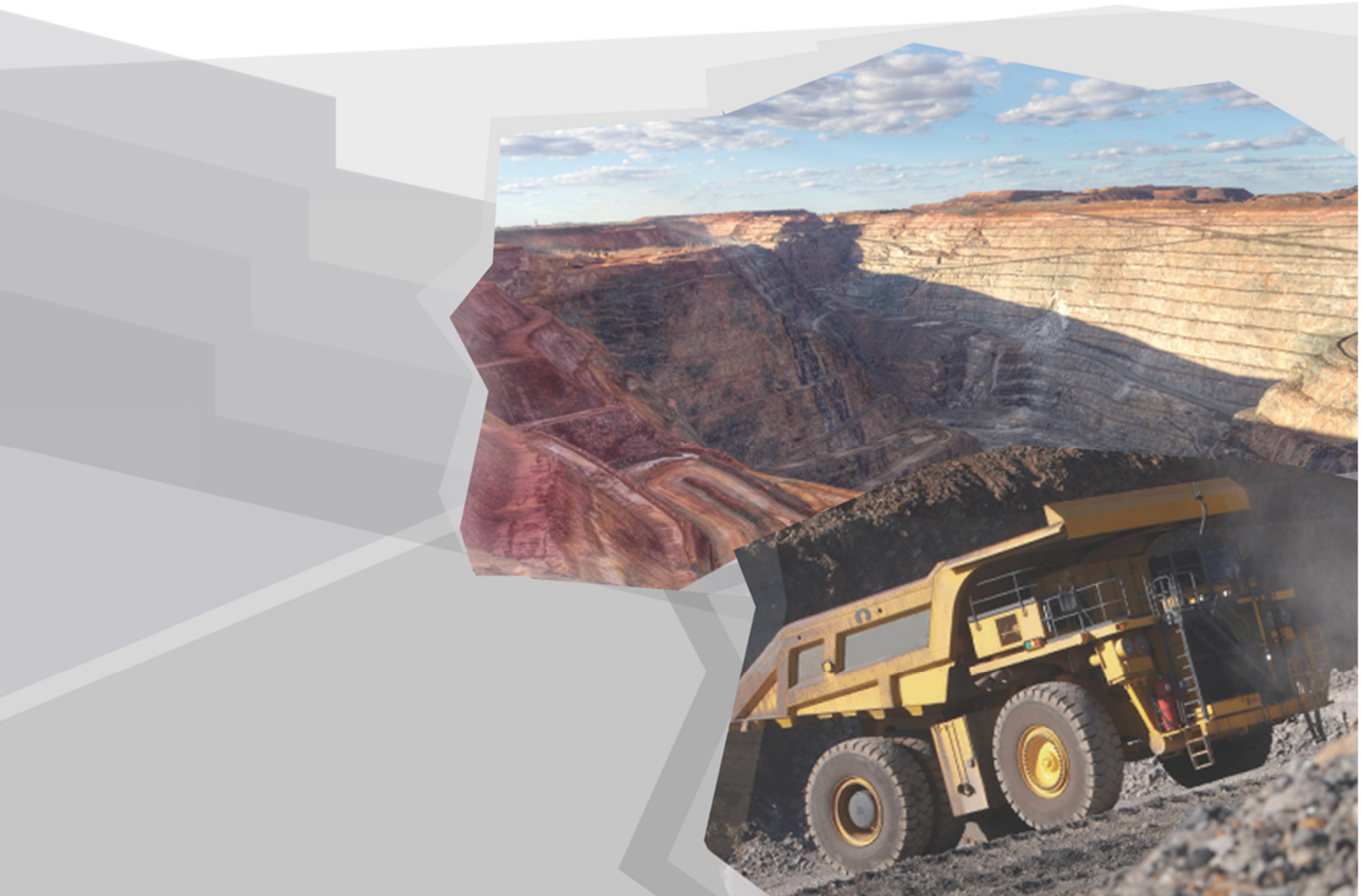
	sulphur for acid mine drainage characterisation). • In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. • Any assumptions behind modelling of selective mining units. • Any assumptions about correlation between variables. • Description of how the geological interpretation was used to control the resource estimates. • Discussion of basis for using or not using grade cutting or capping. • The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	against drill hole data.
Moisture	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	• Tonnages are estimated on in situ basis based on in situ density derived from the Preston Sanders formula which uses the total and coal resource that were derived from laboratory analysis.
Cut-off parameters	• The basis of the adopted cut-off grade(s) or quality parameters applied.	• No cut-off grade has been used.
Mining factors or assumptions	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	• A Minimum thickness of 0.5m has been applied. • No mining losses and dilution factor was used for Resources estimation. • Selected mine optimisation results were used with the consideration of average depth of deep drilling on each area to limit Coal Resources estimation. This to align with the reasonable prospect for eventual economic extraction.
Metallurgical factors or assumptions	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous.	• Coal is mined and sold as raw material, therefore no washing or metallurgical factors are required.

	Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	
Environmental factors or assumptions	• Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	• A selected mine optimization has been used to limit Resource estimation, and it is assumed environmental factors has been considered during mine optimization process, therefore no other exclusion factor was applied.
Bulk density	• Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. • The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit. • Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	• Coal Resources were reported on an in situ basis with the RD (in situ) being adjusted using the Preston-Sanders (1993) formula. Coal samples were analysed for Total Moisture, Inherent (air dried) Moisture.
Classification	• The basis for the classification of the Mineral Resources into varying confidence categories. • Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). • Whether the result appropriately reflects the Competent Person's view of the deposit.	• The classification of Coal Resource categories, (Measured, Indicated and Inferred) is based on the opinion of the Competent Person based on drill spacing, data collection methods and the geological complexity. • The Competent Person is confident on the reliability of geological data and in the understanding of the geology including the continuity of the geology and coal quality. The estimate appropriately reflects the Competent Persons view of the deposit.

Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	• Coal Resources estimations were internally peer reviewed by RPM and no fatal flaws were identified.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• Confidence levels were determined based on the Competent Person's view of the deposit geological complexity. The Competent Person was also used the Indonesian Coal Resources Guideline (SNI 2011) as a reference to define the confidence limit. RPM is of the opinion that this approach is reasonable considering the nature and the location of the deposit. Rounding has also been applied into Resource estimation to reflect relative accuracy. • The statement relates to global estimates. • No mine reconciliation was completed. The mine is not operated yet.

PT Dermaga Energi

Appendix 4B
Table 1 JORC Compliance Check List For Ore Reserves



Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	This JORC Reserve is derived from JORC Code compliant Coal Resources Statement signed by Mr Oki Wijayanto. This Statement and the model associated with it formed the basis of the subsequent Coal Reserve estimate. Coal Resources are reported inclusive of the Coal Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site visits were undertaken by RPM Reserves Competent Person prior to the reference date of the Statement. The site visit only limited to Bayan operation at Tabang existing operation area. Others concession at North and South Pakar has not been operated yet.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	Project has been on production stage. LOM has been developed based on the DE practical pit that has been used as a basis to convert the Reserve. The process used in converting the Coal Resources into Coal Reserves includes defining viable pit limits and applying mining cost, revenue and other modifying factors to the Coal Resources to estimate Coal Reserves.

Criteria	JORC Explanation	Commentary
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	All seams that have been modelled have used the quality information obtained from the resources, with an allowance for dilution and loss based on assumed rock qualities. Minimum Seam thickness defined as mineable was 1.0 m Minimum Separable thickness parting defined at 0.3 m
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling. The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). The mining dilution factors used. The mining recovery factors used. Any minimum mining widths used.	The practical pit designs were developed as the basis of the reported quantities. These pit were designed base on a selected optimisation shell which were cross checked against the BESR for the project. The mining method utilizes appropriately sized excavator and truck fleets to achieve the coal selection, uncovering and mining. Geotechnical studies of the rock strength and other characteristics based on internal DE parameter formed the basis of the pit design. Coal loss from Roof of 80mm and Floor modelled of 50 mm. Dilution total of 100mm (50mm from Roof and 50mm from Floor) Mining Global recovery of 96% Minimum width of 40m has been applied to the pit bottom optimisation process.

Criteria	JORC Explanation	Commentary
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. The infrastructure requirements of the selected mining methods. `	The Inferred coal was identified in the seams with insufficient quality drill holes for Indicated Resource confidence, within the both the geological model and the pit designs. These inferred seams represent 2.9% and seams outside resource boundary represent 0.2% of the total planned LOM mineable quantity, Infrastructure required for the operation is already in place.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. Whether the metallurgical process is well-tested technology or novel in nature. The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. Any assumptions or allowances made for deleterious elements.	The ROM coal is planned to be dumped into graded stockpiles or directly to the crusher. The ROM coal will be feed to the crusher, sized and screened. The coal will be blended to the average grade being created within the period of time for the stockpile construction. Beyond blending and screening no further metallurgical processing is undertaken on the Product coal. Within the global losses there is an allowance that accounts for the loss in volume caused by conveying and general spillage.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue	DE doesn't have the AMDAL yet since it is still on exploration status. DE concessions currently do not have Clean and Clear status from the government. An approximate 17% of concession area has an overlap with a third party and there is an outstanding court case in relation to this matter. However RPM has been advised

Criteria	JORC Explanation	Commentary
	storage and waste dumps should be reported.	by Client that for the remaining 83% of the area can be converted into Production Stage (IUP OP). DE is currently in the process of preparing Environmental Impact Study (AMDAL)
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	All infrastructure have been in placed to support the production. The infrastructure location is at northern area of TA (Bara Tabang area)
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study. The methodology used to estimate operating costs. Allowances made for the content of deleterious elements. The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products. The source of exchange rates used in the study. Derivation of transportation charges. The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. The allowances made for royalties payable, both Government and private.	Operating cost has been supplied by Client based on contracted rate and has been reviewed as a reasonable cost to be used for this study. Capital cost were not used in determining the breakeven SR. Royalties are based on Government statutory royalties.

Criteria	JORC Explanation	Commentary
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. .	Forward pricing in the economic model is based on the real dollar value of the coal as defined by the forecast coal price. All costs and revenues are based on a USD pricing basis so there is no exchange variation of the project financials.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. A customer and competitor analysis along with the identification of likely market windows for the product. Price and volume forecasts and the basis for these forecasts. For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	No other studies have been undertaken for this project, for market analysis. The current coal sales agreements are anticipated to be continued or renegotiated.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. NPV ranges and sensitivity to variations in the significant assumptions and inputs.	The economic pit limit were determined by a marginal cost versus revenue analysis.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	DE currently in the process of preparing Environmental Impact Study (AMDAL)

Criteria	JORC Explanation	Commentary
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: Any identified material naturally occurring risks. The status of material legal agreements and marketing arrangements. The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	All mining project operate in an environment of geological uncertainty, RPM is not aware of any potential factor that could affect the operation viability. The DE Project is best described as being in the exploration stage. A suspension permit of exploration activity has been acquired until 29 October 2017, due to a moratorium issued by the governor of East Kalimantan. The Client noted the DE concession has not obtained Clean and Clear status from the government due to an approximate 17% of area overlap with a third party and there is an outstanding court case in relation to this matter. Therefore, DE will not be able to upgrade this concession into production status until the court case is fully resolved. RPM has been advised by the Client they are confident in converting the remaining 83% of the area to Production Status (IUP OP) in the event of an unfavourable court ruling.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories. Whether the result appropriately reflects the Competent Person's view of the deposit. The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	All of the Measured category Coal Resource contained within the pit design transferred to Proved Coal Reserve after application of the appropriate modifying factors. All of the Indicated category Coal Resource contained within the pit design transferred to Probable Coal Reserve after application of the appropriate modifying factors
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	Internal review by RPM senior staff as per finding in this report.

Criteria	JORC Explanation	Commentary
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The Reserve estimate have been independently checked along with the pit shell coal quantity and Resource Estimation result. Life of mine plan has been developed to support the Reserve statement.

PT Tiwa Abadi

Appendix 4A Table 1 JORC Compliance Check List For Resources and Exploration

Section 1 Sampling Techniques and Data

Criteria	JORC Explanation	Commentary

Sampling techniques	• Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.
	• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.
	• Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.
		• Core sampling for coal quality work took place using HQ (63mm) core. Coal core samples were sent to the laboratory with chain of custody paperwork.
		• Open hole drilling was also used with chip samples of cuttings and logged by the rig geologist. These chip samples were not analysed and used in quality modelling.
		• A suite of downhole geophysical surveys, including Density, Gamma, and Calliper were typically run in the majority of drill holes. No drill hole deviation was completed due to vertical drilling and flat dips seam. The geophysical logging was carried out by external contractor and subject to their internal calibration, quality assurance and quality control procedures. Geophysical logs were acquired for all of drill holes to supplement the geologist's lithological description of the cores to:
		  • assist with ensuring that the core recoveries were satisfactory (> 90%); and,
		  • assist with correlation of the various seams and to demonstrate continuity of seam character.

Drilling techniques	• Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	• PCD bits using air and water are used to complete the open hole sections of drill holes. • Use of HQ-3 (triple tube barrel) follows Industry accepted Standards for acquisition of borecore.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample	• Linear drill hole core recovery was measured for all coal quality drill holes on a run by run basis. Actual recovered core lengths are measured with a tape measure and any core loss is recorded in geological logs, coal quality sample intervals and in the run by run

	recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	drilling record field sheets. • Core holes were redrilled when poor core recovery had potential to materially affect the coal quality models (in general, this is where recovery was less than 90%). • No sample bias was identified in the current model database.
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. • The total length and percentage of the relevant intersections logged.	• A drill site geologist was present at all times during drilling operations. • Preliminary core logs were derived from lithological logging of open hole chip "cuttings" and logging of drill core. • All holes were lithologically logged. The logging of the chip/cuttings and core samples is qualitative and detailed which includes a record of the recovery of the total length and the cored length, rock type, stratigraphic unit and numerous adjectives to describe the sample in terms of colour, grain size, bedding etc. all of which is entirely sufficient to describe the various lithologies and coal samples to support the coal resource estimation from a geological, geotechnical and coal quality consideration. Field drill logs and field coal sample depths were subsequently reconciled against the geophysical logs. Barren holes were used to limit coal continuity.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.	• No splitting of core is undertaken in the field. Sample preparation was done in PT Georservices laboratory at Balikpapan. • Coal samples were wrapped and sealed immediately once core logging was completed to minimise moisture loss to ensure the samples were representative of the in situ moisture. • The coal samples collected for quality modelling were from HQ core size (63mm). This core size provides sufficient sample mass for testing of raw coal parameters.

	• Whether sample sizes are appropriate to the grain size of the material being sampled.	
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	• The samples were submitted to PT Geoservices laboratory for analysis. The laboratory is internationally accredited and all analyses were conducted in accordance with appropriate international standards • Most of coal plies have been subjected to a proximate analysis (which includes IM, Ash, VM, FC), TM, TS and CV. • A representative number of samples were also analysed for HGI, AFT, Ultimate Analysis, and Ash Analysis. • Limited samples were processed for MHC test work. • No QAQC was performed directly by TA. It is expected that such a thorough QAQC was performed by PT.Geoservices as accredited external laboratories.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• The logging and sampling was conducted by PT GMT Indonesia geologists, a sub-contractor acting on behalf of PTRI. The majority of core samples were acquired using the “touch cored” and “twinned cored” holes method. The samples depths were adjusted using geophysical log data. There are also several geotechnical holes which were drilled as fully cored holes. • The protocols for sample acquisition, data entry, and data verification were developed by PTRI. The assaying was completed by external accredited laboratory. • No adjustment was made to the assay data. A more detail discussion is available in the **Section 5.7** and **Section 6.2** of the TA JORC Statement**.**
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• All of drill hole collars were surveyed by Total Station. The topography was derived from combination of high precision aerial survey (LIDAR). • The Project is using UTM 50N grid system. • The benchmarks were derived from high precision Geodetic GPS which tied to the Government survey

		control.
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• Drill hole line spacing is typically 200-250 m in most of the areas, and 100-150 m detail drilling in the northeast of TJ. • This is considered adequate for classification of Coal Resources to Measured and Indicated category with due consideration for the variance in coal seam thickness, coal quality and structural complexity. • Sample compositing to a seam basis has been applied whenever the samples were based on ply by ply basis.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• The geological data including samples, was gathered based on vertical drilling which being supported with geophysical logging.
Sample security	• The measures taken to ensure sample security.	• All core and cuttings were geologically described by qualified field geologists. • Coal samples were stored in core trays on site. Samples were taken form the core boxes and bagged in plastic bags with hole and sample number, and sent to the external laboratories once sampling instructions were completed. • All sampling and sample labelling was undertaken by or supervised by the field geologist. • Samples were packed, handled and transported with normal care, documentation and chain of custody • Coal is a bulk commodity so no high level security measures are deemed necessary since it is very unlikely to be subject to systematic material impact from sample tampering, theft or loss.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• Sampling and data acquisition procedures were reviewed by RPM at the time of the 2009 site visit, which confirming that the exploration approach being used is acceptable for Resource reporting purposes.

Section 2 Reporting of Exploration Results

Criteria	JORC Explanation	Commentary
Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. • The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• All concessions have valid IUP (mining lease), documentation. No material issues were identified regarding this matter. • The project is in operating stage with valid license. No issue to operate in the area.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• To the RPM's knowledge, no exploration was completed by other parties other than GMT under the previous concessions owner (IBU).
Geology	• Deposit type, geological setting and style of mineralisation.	• The Project concessions are within thick, multi seam deposits that occur within the Miocene Age Balikpapan Formation of the Kutai Basin. The structure of the deposit area is overlying the northern and western limb of a broad synclinal structure plunging to the southeast, with dips ranges of 1 to 5 degree.
Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually material and should be reported. • Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• Samples are composited by weighting by mass if the samples were taken on ply by ply basis. No maximum and/or minimum cut-off were used in the modelling and estimation process.
Relationship between mineralisation widths and intercept length	• These relationship are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be	• The geometry of the deposit is reasonably understood. This was based on the drill hole data and other geological information (regional and local mapping results). • Detail seam thicknesses are reported in apparent

	reported. • If it is not known and only down hole lengths are reported, there should be a clear statement to this effect e.g. 'down hole length, true width not known)	thickness and provided in the Appendix C of the TA JORC Statement.

Drill hole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:
	  • easting and northing of the drill hole collar
	  • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar
	  • dip and azimuth of the hole
	  • down hole length and interception depth
	• hole length.
	• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.
		• A total of 1,242 holes covers BT, FSP, and Pakar North concessions were used for modelling. All holes in Pakar North were geophysically logged with coring for the representative holes and potential seams.
		• A more detail drill holes information, including location, seam thickness, depth and quality were provided in a separate file.

Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• Maps and sections are provided in the report in the figures and appendices.
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• All information provided by Client including exploration results has been reviewed. This report references all available exploration results from the Client up to the commencement date of the Resource estimation.
Other substantive exploration data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	• Geotechnical and hydrogeological studies were completed, with the results of those studies being incorporated for mine planning purposes.
Further work	• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or	• Future drilling is planned within the target area (LOM area) to increase confidence level and model

	large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	accuracy.

Section 3 Estimation and Reporting of Mineral Resources

Criteria		Commentary

Database integrity	• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.
	• Data validation procedures used.
		• TA is using Microsoft Excel as the main geological database storage. To minimise errors in the database, several main steps were applied:
		  • coal seam data entered into the geological database was reconciled against the logs whenever available.
		  • There are a number of underlying "business rules" built into the database that help insure consistency and integrity of data including, but not limited to:
		  • relational link between geological, down hole geophysical and coal quality data;
		  • restriction of data entry to the interval of the defined hole depth;
		  • basic statistics such as histogram for major quality parameters (CV, Ash & TS) and cross plots (CV, Ash & RD) to ensure data consistency and understanding errors if any; and,
		  • basic coal quality integrity checks such as ensuring data is within normal range limits, that proximate analyses add to 100 percent etc.
		  • Seam and stratigraphic picks and correlations were independently checked and rechecked by senior geological staff of RPM. After modelling, anomalous seam and interburden structure and thicknesses were interrogated and errors iteratively corrected from the database.
		• It is highly unlikely that there is significant corrupt data in the database, given the validation procedures above.
		• Some errors may still pass through to the geological

		and coal quality models, considering that coal is a bulk commodity of relative even consistency and the large number of drill holes on which the resource is based, such errors are unlikely to have a material impact on the resource estimate.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• The site visit has been undertaken by RPM senior Consultant (Mr. Gusti Sumardika) in December 2016. Mr. Gusti Sumardika is permanent employee of RPM and also a Competent Person Indonesia (CPI). The exploration is completed to a reasonably high standard. No major issues were identified.
Geological interpretation	• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. • Nature of the data used and of any assumptions made. • The effect, if any, of alternative interpretations on Mineral Resource estimation. • The use of geology in guiding and controlling Mineral Resource estimation. • The factors affecting continuity both of grade and geology.	• Geological interpretation was based on the drilling data with limited support of geophysical log information. • TA also used the regional and local mapping results to support the geological interpretation of the deposit • The confidence level of the deposit was determined based on the data distribution and geological complexity. • All necessary constraints which affect continuity of the coal seams were considered.
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	• The deposit covers area approx. 5,000 ha, with an approximate strike length of 13 km. A set of plans are also provided in the report.
Estimation and modelling techniques	• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. • The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. • The assumptions made regarding recovery of by-products. • Estimation of deleterious elements or other non-grade variables of economic significance (e.g.	• A three dimensional computer models were built using ABB MineScape software. Extrapolation distances for Coal Resource estimation were based on geological continuity (seam thickness, quality and structure). • Check estimates were undertaken by other competent geologist within RPM group to ensure the validity of the result. • The models were based on gridded modelling approach. • No selective mining unit assumptions were used for modelling processes. • Model validation was undertaken by visually inspecting the model sections, structure and quality contour, etc.

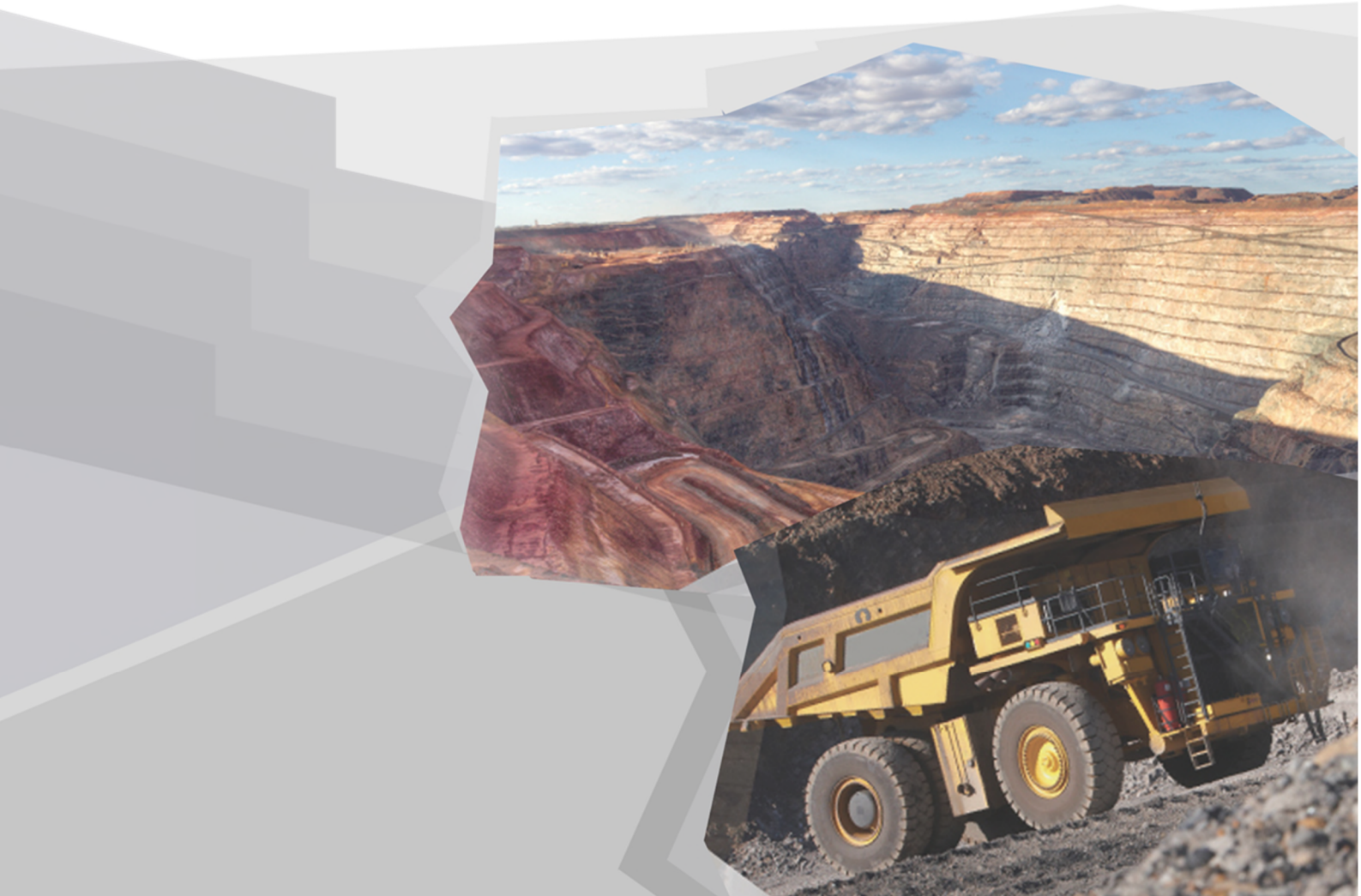
	sulphur for acid mine drainage characterisation). • In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. • Any assumptions behind modelling of selective mining units. • Any assumptions about correlation between variables. • Description of how the geological interpretation was used to control the resource estimates. • Discussion of basis for using or not using grade cutting or capping. • The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	against drill hole data.
Moisture	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	• Tonnages are estimated on in situ basis based on in situ density derived from the Preston Sanders formula which uses the total and coal resource that were derived from laboratory analysis.
Cut-off parameters	• The basis of the adopted cut-off grade(s) or quality parameters applied.	• No cut-off grade has been used.
Mining factors or assumptions	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	• A Minimum thickness of 0.5m has been applied. • No mining losses and dilution factor was used for Resources estimation. • Selected mine optimisation results were used with the consideration of average depth of deep drilling on each area to limit Coal Resources estimation. This to align with the reasonable prospect for eventual economic extraction.
Metallurgical factors or assumptions	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous.	• Coal is mined and sold as raw material, therefore no washing or metallurgical factors are required.

	Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	
Environmental factors or assumptions	• Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	• A selected mine optimization has been used to limit Resource estimation, and it is assumed environmental factors has been considered during mine optimization process, therefore no other exclusion factor was applied.
Bulk density	• Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. • The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit. • Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	• Coal Resources were reported on an in situ basis with the RD (in situ) being adjusted using the Preston-Sanders (1993) formula. Coal samples were analysed for Total Moisture, Inherent (air dried) Moisture.
Classification	• The basis for the classification of the Mineral Resources into varying confidence categories. • Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). • Whether the result appropriately reflects the Competent Person's view of the deposit.	• The classification of Coal Resource categories, (Measured, Indicated and Inferred) is based on the opinion of the Competent Person based on drill spacing, data collection methods and the geological complexity. • The Competent Person is confident on the reliability of geological data and in the understanding of the geology including the continuity of the geology and coal quality. The estimate appropriately reflects the Competent Persons view of the deposit.

Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	• Coal Resources estimations were internally peer reviewed by RPM and no fatal flaws were identified.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• Confidence levels were determined based on the Competent Person's view of the deposit geological complexity. The Competent Person was also used the Indonesian Coal Resources Guideline (SNI 2011) as a reference to define the confidence limit. RPM is of the opinion that this approach is reasonable considering the nature and the location of the deposit. Rounding has also been applied into Resource estimation to reflect relative accuracy. • The statement relates to global estimates. • No mine reconciliation was completed. The mine is not operated yet.

PT Tiwa Abadi

Appendix 4B
Table 1 JORC Compliance Check List For Ore Reserves



Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	This JORC Reserve is derived from JORC Code compliant Coal Resources Statement signed by Mr Oki Wijayanto. This Statement and the model associated with it formed the basis of the subsequent Coal Reserve estimate. Coal Resources are reported inclusive of the Coal Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site visits were undertaken by RPM Reserves Competent Person prior to the reference date of the Statement. The site visit only limited to Bayan operation at Tabang existing operation area. Others concession at North and South Pakar has not been operated yet.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	Project still on green field. LOM has been developed based on the TA practical pit that has been used as a basis to convert the Reserve. The process used in converting the Coal Resources into Coal Reserves includes defining viable pit limits and applying mining cost, revenue and other modifying factors to the Coal Resources to estimate Coal Reserves.

Criteria	JORC Explanation	Commentary
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	All seams that have been modelled have used the quality information obtained from the resources, with an allowance for dilution and loss based on assumed rock qualities. Minimum Seam thickness defined as mineable was 1.0 m Minimum Separable thickness parting defined at 0.3 m
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling. The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). The mining dilution factors used. The mining recovery factors used. Any minimum mining widths used.	The practical pit designs were developed as the basis of the reported quantities. These pits were designed based on a selected optimisation shell which were cross checked against the BESR for the project. The mining method utilizes appropriately sized excavator and truck fleets to achieve the coal selection, uncovering and mining. Geotechnical studies of the rock strength and other characteristics based on internal TA parameter formed the basis of the pit design. Coal loss from Roof of 80mm and Floor modelled of 50 mm. Dilution total of 100mm (50mm from Roof and 50mm from Floor) Mining Global recovery of 96% Minimum width of 40m has been applied to the pit bottom optimisation process.

Criteria	JORC Explanation	Commentary
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. The infrastructure requirements of the selected mining methods. `	The Inferred coal was identified in the seams with insufficient quality drill holes for Indicated Resource confidence, within the both the geological model and the pit designs. These inferred seams represent 21% and seams outside resource boundary represent 48% of the total planned LOM mineable quantity, Infrastructure required for the operation is already in place.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. Whether the metallurgical process is well-tested technology or novel in nature. The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. Any assumptions or allowances made for deleterious elements.	The ROM coal is planned to be dumped into graded stockpiles or directly to the crusher. The ROM coal will be feed to the crusher, sized and screened. The coal will be blended to the average grade being created within the period of time for the stockpile construction. Beyond blending and screening no further metallurgical processing is undertaken on the Product coal. Within the global losses there is an allowance that accounts for the loss in volume caused by conveying and general spillage.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue	TA doesn't have the AMDAL yet since it is still in exploration status. TA is currently preparing Exploration Reports, Feasibility Studies and an Environmental Impact Study (AMDAL).

Criteria	JORC Explanation	Commentary
	storage and waste dumps should be reported.	
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	All infrastructure is in place to support the production. The infrastructure location is at the northern area of TA (Bara Tabang area)
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study. The methodology used to estimate operating costs. Allowances made for the content of deleterious elements. The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products. The source of exchange rates used in the study. Derivation of transportation charges. The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. The allowances made for royalties payable, both Government and private.	There was no plan to update the capital for the Project. Operating cost has been supplied by Client based on contracted rate and has been reviewed as a reasonable cost to be used for this study. Royalties are based on Government statutory royalties.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or	Forward pricing in the economic model is based on the real dollar value of the coal as defined by the forecast

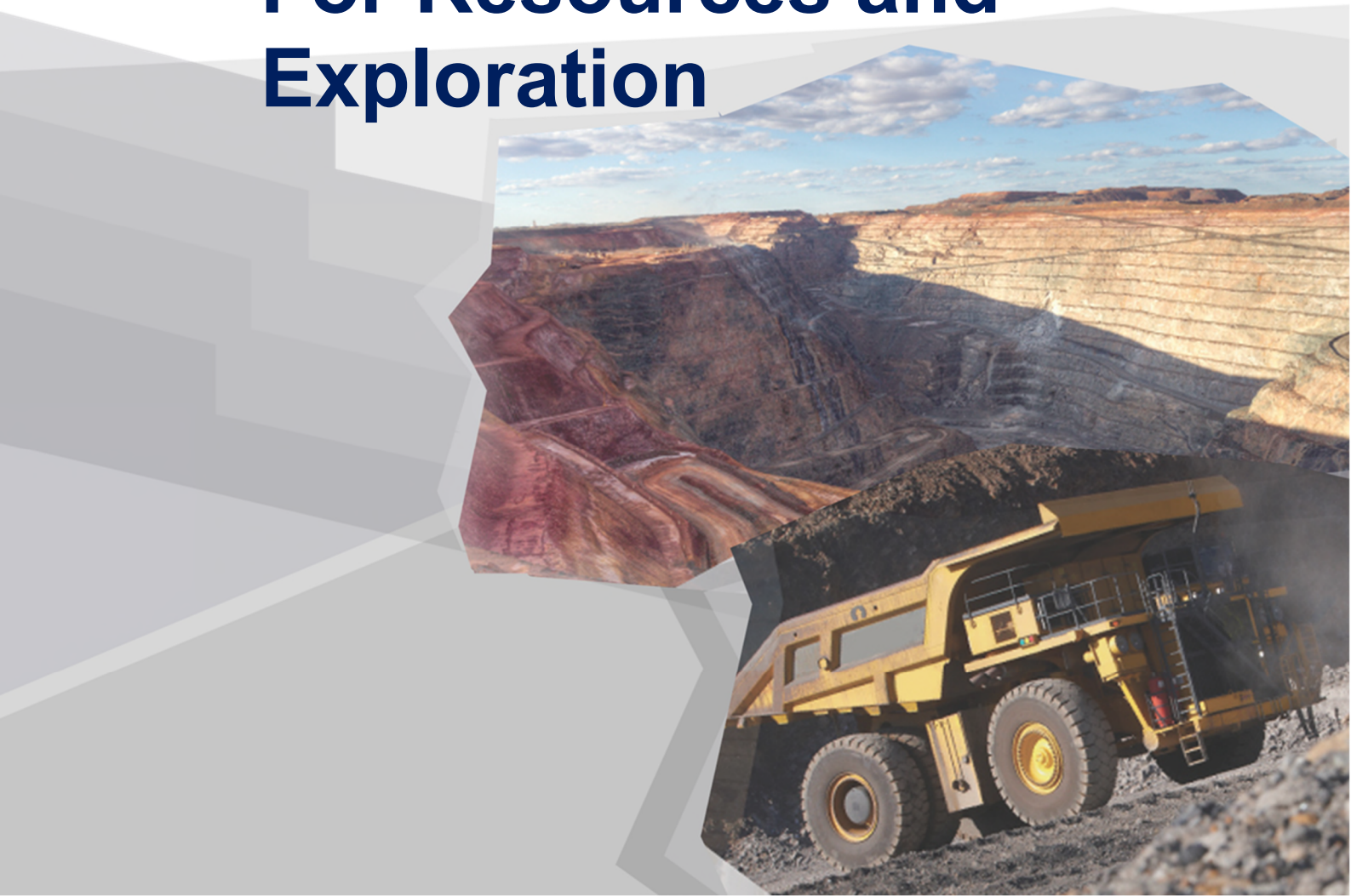
Criteria	JORC Explanation	Commentary
	commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. .	coal price. All costs and revenues are based on a USD pricing basis so there is no exchange variation of the project financials.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. A customer and competitor analysis along with the identification of likely market windows for the product. Price and volume forecasts and the basis for these forecasts. For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	No other studies have been undertaken for this project, for market analysis. The current coal sales agreements are anticipated to be continued or renegotiated.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. NPV ranges and sensitivity to variations in the significant assumptions and inputs.	The economic pit limits were determined by a marginal cost versus revenue analysis.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	TA is currently preparing an Environmental Impact Study (AMDAL).
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	All mining projects operate in an environment of geological uncertainty, RPM is not aware of any potential factor that could affect the operation viability.

Criteria	JORC Explanation	Commentary
	Any identified material naturally occurring risks. The status of material legal agreements and marketing arrangements. The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	TA currently in the process of preparing Exploration Reports, Feasibility Studies and an Environmental Impact Study (AMDAL) with a view to upgrading these concessions into Production Stage (IUP OP). The expected timeline is in the second half of 2017.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories. Whether the result appropriately reflects the Competent Person's view of the deposit. The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	All of the Measured category Coal Resource contained within the pit design transferred to Proved Coal Reserve after application of the appropriate modifying factors. All of the Indicated category Coal Resource contained within the pit design transferred to Probable Coal Reserve after application of the appropriate modifying factors
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	Internal review by RPM senior staff as per finding in this report.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of	The Reserves estimate have been independently checked along with the pit shell coal quantity and Resource Estimation result.

Criteria	JORC Explanation	Commentary
	statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Life of mine plan has been developed to support the Reserve statement.

PT Tanur Jaya

Appendix 4A
Table 1 JORC Compliance Check List For Resources and Exploration



Section 1 Sampling Techniques and Data

Criteria	JORC Explanation	Commentary

Sampling techniques	• Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.
	• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.
	• Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.
		• Core sampling for coal quality work took place using HQ (63mm) core. Coal core samples were sent to the laboratory with chain of custody paperwork.
		• Open hole drilling was also used with chip samples of cuttings and logged by the rig geologist. These chip samples were not analysed and used in quality modelling.
		• A suite of downhole geophysical surveys, including Density, Gamma, and Calliper were typically run in the majority of drill holes. No drill hole deviation was completed due to vertical drilling. The geophysical logging was carried out by external contractor and subject to their internal calibration, quality assurance and quality control procedures. Geophysical logs were acquired to supplement the geologist's lithological description of the cores to:
		  • assist with ensuring that the core recoveries were satisfactory (> 90%); and,
		  • Assist with correlation of the various seams and to demonstrate continuity of seam character.

Drilling techniques	• Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	• PCD bits using air and water are used to complete the open hole sections of drill holes. • Use of HQ-3 (triple tube barrel) follows Industry accepted Standards for acquisition of borecore.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may	• Linear drill hole core recovery was measured for all coal quality drill holes on a run by run basis. Actual recovered core lengths are measured with a tape measure and any core loss is recorded in geological logs, coal quality sample intervals and in the run by run drilling record field sheets.

	have occurred due to preferential loss/gain of fine/coarse material.	• Core holes were redrilled when poor core recovery had potential to materially affect the coal quality models (in general, this is where recovery was less than 90%). • No sample bias was identified in the current model database.
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. • The total length and percentage of the relevant intersections logged.	• A drill site geologist was present at all times during drilling operations. • Preliminary core logs were derived from lithological logging of open hole chip "cuttings" and logging of drill core. • All holes were lithologically logged. The logging of the chip/cuttings and core samples is qualitative and detailed which includes a record of the recovery of the total length and the cored length, rock type, stratigraphic unit and numerous adjectives to describe the sample in terms of colour, grain size, bedding etc. all of which is entirely sufficient to describe the various lithologies and coal samples to support the coal resource estimation from a geological, geotechnical and coal quality consideration. Field drill logs and field coal sample depths were subsequently reconciled against the geophysical logs whenever available. Barren holes were used to limit coal continuity.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain	• No splitting of core is undertaken in the field. Sample preparation was done in PT Geoservices laboratory. • Coal samples were wrapped and sealed immediately once core logging was completed to minimise moisture loss to ensure the samples were representative of the in situ moisture. • The coal samples collected for quality modelling were from HQ core size (63mm). This core size provides sufficient sample mass for testing of raw coal parameters.

	size of the material being sampled.	
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	• The samples were submitted to PT Geoservices laboratory for analysis. The laboratory is internationally accredited and all analyses were conducted in accordance with appropriate international standards • Most of coal plies have been subjected to a proximate analysis (which includes IM, Ash, VM, FC), TM, TS and CV. • No QAQC was performed directly by TJ. It is expected that such a thorough QAQC was performed by PT. Geoservices as accredited external laboratories.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• The logging and sampling was conducted by PT GMT Indonesia geologists, a sub-contractor acting on behalf of PTRI. The majority of core samples were acquired using the “touch cored” and “twinned cored” holes method. The samples depths were adjusted using geophysical log data. There are also several geotechnical holes which were drilled as fully cored holes. • The protocols for sample acquisition, data entry, and data verification were developed by PTRI. The assaying was completed by external accredited laboratory. • No adjustment was made to the assay data. A more detail discussion is available in the **Section 5.7** and **Section 6.2** of the TJ JORC Statement**.**
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• All of drill hole collars were surveyed by Total Station. The topography was derived from combination of high precision aerial survey (LIDAR). • The Project is using UTM 50N grid system. • The benchmarks were derived from high precision Geodetic GPS which tied to the Government survey control.
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade	• Drill hole line spacing is typically 200-250 m in most of the areas, and 100-150 m detail drilling in the northeast of TJ

	continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• This is considered adequate for classification of Coal Resources to Measured and Indicated category with due consideration for the variance in coal seam thickness, coal quality and structural complexity. • Sample compositing to a seam basis has been applied whenever the samples were based on ply by ply basis.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• The geological data including samples, was gathered based on vertical drilling with some being supported with geophysical logging.
Sample security	• The measures taken to ensure sample security.	• All core and cuttings were geologically described by qualified field geologists. • Coal samples were stored in core trays on site. Samples were taken form the core boxes and bagged in plastic bags with hole and sample number, and sent to the external laboratories once sampling instructions were completed. • All sampling and sample labelling was undertaken by or supervised by the field geologist. • Samples were packed, handled and transported with normal care, documentation and chain of custody • Coal is a bulk commodity so no high level security measures are deemed necessary since it is very unlikely to be subject to systematic material impact from sample tampering, theft or loss.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• Sampling and data acquisition procedures were reviewed by RPM at the time of the 2016 site visit, which confirming that the exploration approach being used is acceptable for Resource reporting purposes.

Section 2 Reporting of Exploration Results

Criteria	JORC Explanation	Commentary
Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. • The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• All concessions have valid IUP (mining lease), documentation. No material issues were identified regarding this matter. • The project is in operating stage with valid license. No issue to operate in the area.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• To the RPM's knowledge, no exploration was completed by other parties other than TJ.
Geology	• Deposit type, geological setting and style of mineralisation.	• The Project concessions are within thick, multi seam deposits that occur within the Miocene Age Balikpapan Formation of the Kutai Basin. The structure of the deposit area is overlying the northern and western limb of a broad synclinal structure plunging to the southeast, with dips ranges of 1 to 5 degree.
Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually material and should be reported. • Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• Samples are composited by weighting by mass if the samples were taken on ply by ply basis. No maximum and/or minimum cut-off were used in the modelling and estimation process.
Relationship between mineralisation widths and intercept length	• These relationship are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. • If it is not known and only down hole lengths are reported, there should be a clear statement to this	• The geometry of the deposit is reasonably understood. This was based on the drill hole data and other geological information (regional and local mapping results). • Detail seam thicknesses are reported in apparent thickness and provided in the Appendix C of the TJ JORC Statement.

	effect e.g. 'down hole length, true width not known)	

Drill hole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:
	  • easting and northing of the drill hole collar
	  • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar
	  • dip and azimuth of the hole
	  • down hole length and interception depth
	• hole length.
	• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.
		• A total of 1,242 holes covers BT, FSP, and Pakar North concessions were used for modelling. All holes in Pakar North were geophysically logged with coring for the representative holes and potential seams.
		• A more detail drill holes information, including location, seam thickness, depth and quality were provided in a separate file.

Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• Maps and sections are provided in the report in the figures and appendices.
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• All information provided by Client including exploration results has been reviewed. This report references all available exploration results from the Client up to the commencement date of the Resource estimation.
Other substantive exploration data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	• Geotechnical and hydrogeological studies were completed, with the results of those studies being incorporated for mine planning purposes.
Further work	• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological	• Future drilling is planned within the target area (LOM area) to increase confidence level and model accuracy.

interpretations and future drilling areas, provided this information is not commercially sensitive.

Section 3 Estimation and Reporting of Mineral Resources

Criteria		Commentary

Database integrity	• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.
	• Data validation procedures used.
		• TJ is using Microsoft Excel as the main geological database storage. To minimise errors in the database, several main steps were applied:
		  • coal seam data entered into the geological database was reconciled against the logs whenever available.
		  • There are a number of underlying "business rules" built into the database that help insure consistency and integrity of data including, but not limited to:
		  • relational link between geological, down hole geophysical and coal quality data;
		  • restriction of data entry to the interval of the defined hole depth;
		  • basic statistics such as histogram for major quality parameters (CV, Ash & TS) and cross plots (CV, Ash & RD) to ensure data consistency and understanding errors if any; and,
		  • basic coal quality integrity checks such as ensuring data is within normal range limits, that proximate analyses add to 100 percent etc.
		  • Seam and stratigraphic picks and correlations were independently checked and rechecked by senior geological staff of RPM. After modelling, anomalous seam and interburden structure and thicknesses were interrogated and errors iteratively corrected from the database.
		• It is highly unlikely that there is significant corrupt data in the database, given the validation procedures above.
		• Some errors may still pass through to the geological

		and coal quality models, considering that coal is a bulk commodity of relative even consistency and the large number of drill holes on which the resource is based, such errors are unlikely to have a material impact on the resource estimate.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• The site visit has been undertaken by RPM senior Consultant (Mr. Gusti Sumardika) in December 2016. Mr. Gusti Sumardika is permanent employee of RPM and also a Competent Person Indonesia (CPI). The exploration is completed to a reasonably high standard. No major issues were identified.
Geological interpretation	• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. • Nature of the data used and of any assumptions made. • The effect, if any, of alternative interpretations on Mineral Resource estimation. • The use of geology in guiding and controlling Mineral Resource estimation. • The factors affecting continuity both of grade and geology.	• Geological interpretation was based on the drilling data with limited support of geophysical log information. • TJ also used the regional and local mapping results to support the geological interpretation of the deposit • The confidence level of the deposit was determined based on the data distribution and geological complexity. • All necessary constraints which affect continuity of the coal seams were considered.
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	• The deposit covers area approx. 4,600 ha, with an approximate strike length of 6 km and approximate width 8 km.
Estimation and modelling techniques	• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. • The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. • The assumptions made regarding recovery of by-products. • Estimation of deleterious elements or other non-grade variables of economic significance (e.g.	• A three dimensional computer models were built using ABB MineScape software. Extrapolation distances for Coal Resource estimation were based on geological continuity (seam thickness, quality and structure). • Check estimates were undertaken by other competent geologist within RPM group to ensure the validity of the result. • The models were based on gridded modelling approach. • No selective mining unit assumptions were used for modelling processes. • Model validation was undertaken by visually inspecting the model sections, structure and quality contour, etc.

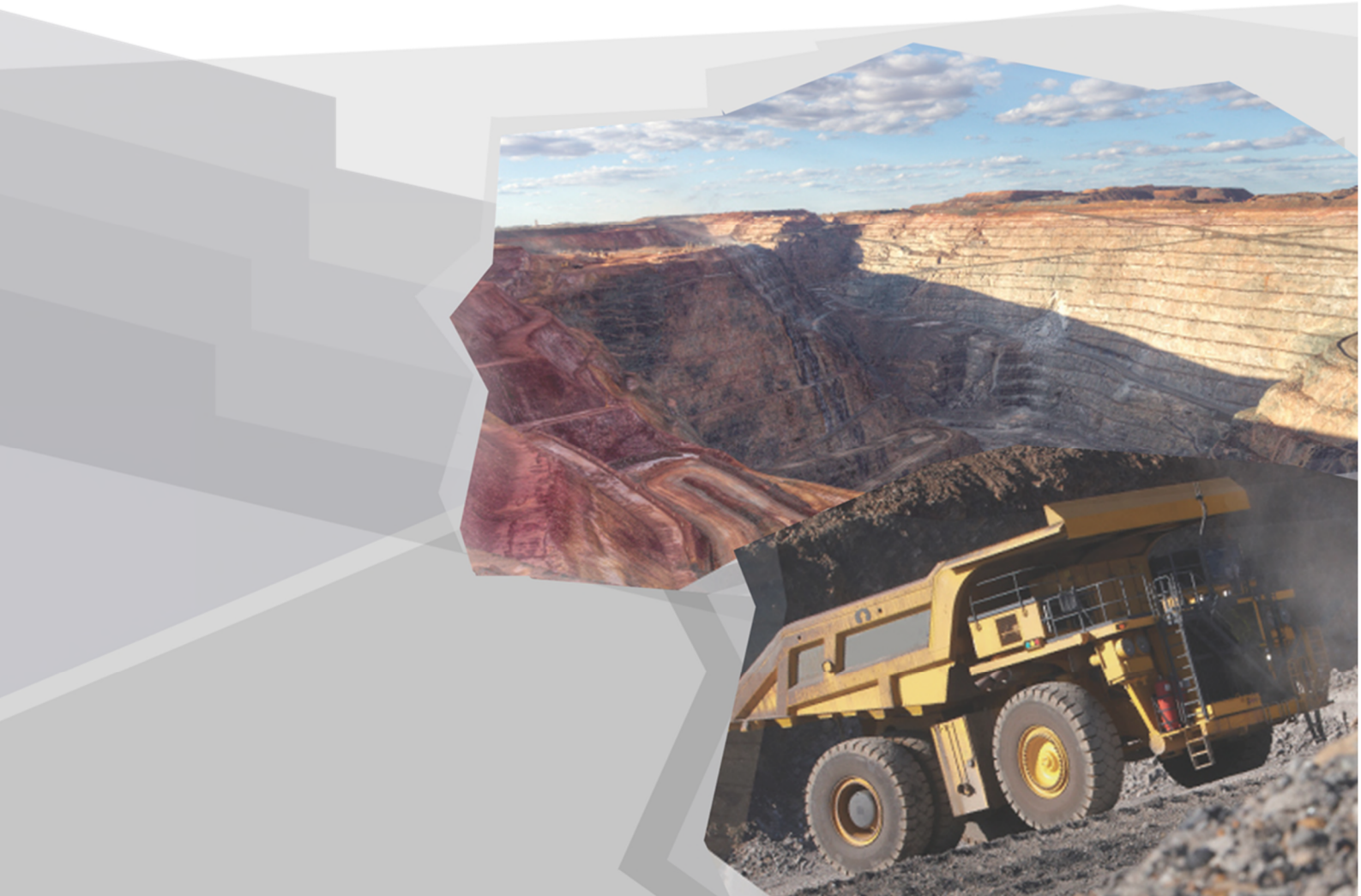
	sulphur for acid mine drainage characterisation). • In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. • Any assumptions behind modelling of selective mining units. • Any assumptions about correlation between variables. • Description of how the geological interpretation was used to control the resource estimates. • Discussion of basis for using or not using grade cutting or capping. • The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	against drill hole data.
Moisture	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	• Tonnages are estimated on in situ basis based on in situ density derived from the Preston Sanders formula which uses the total and coal resource that were derived from laboratory analysis.
Cut-off parameters	• The basis of the adopted cut-off grade(s) or quality parameters applied.	• No cut-off grade has been used.
Mining factors or assumptions	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	• A Minimum thickness of 0.5m has been applied. • No mining losses and dilution factor was used for Resources estimation. • Selected mine optimisation results were used with the consideration of average depth of deep drilling on each area to limit Coal Resources estimation. This to align with the reasonable prospect for eventual economic extraction.
Metallurgical factors or assumptions	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous.	• Coal is mined and sold as raw material, therefore no washing or metallurgical factors are required.

	Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	
Environmental factors or assumptions	• Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	• A selected mine optimization has been used to limit Resource estimation, and it is assumed environmental factors has been considered during mine optimization process, therefore no other exclusion factor was applied.
Bulk density	• Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. • The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit. • Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	• Coal Resources were reported on an in situ basis with the RD (in situ) being adjusted using the Preston-Sanders (1993) formula. Coal samples were analysed for Total Moisture, Inherent (air dried) Moisture.
Classification	• The basis for the classification of the Mineral Resources into varying confidence categories. • Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). • Whether the result appropriately reflects the Competent Person's view of the deposit.	• The classification of Coal Resource categories, (Measured, Indicated and Inferred) is based on the opinion of the Competent Person based on drill spacing, data collection methods and the geological complexity. • The Competent Person is confident on the reliability of geological data and in the understanding of the geology including the continuity of the geology and coal quality. The estimate appropriately reflects the Competent Persons view of the deposit.

Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	• Coal Resources estimations were internally peer reviewed by RPM and no fatal flaws were identified.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• Confidence levels were determined based on the Competent Person's view of the deposit geological complexity. The Competent Person was also used the Indonesian Coal Resources Guideline (SNI 2011) as a reference to define the confidence limit. RPM is of the opinion that this approach is reasonable considering the nature and the location of the deposit. Rounding has also been applied into Resource estimation to reflect relative accuracy. • The statement relates to global estimates. • No mine reconciliation was completed. The mine is not operated yet.

PT Tanur Jaya

Appendix 4B
Table 1 JORC Compliance Check List For Ore Reserves



Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	This JORC Reserve is derived from JORC Code compliant Coal Resources Statement signed by Mr Oki Wijayanto. This Statement and the model associated with it formed the basis of the subsequent Coal Reserve estimate. Coal Resources are reported inclusive of the Coal Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site visits were undertaken by RPM Reserves Competent Person prior to the reference date of the Statement. The site visit only limited to Bayan operation at Tabang existing operation area. Others concession at North and South Pakar has not been operated yet.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	Project still on green field. LOM has been developed based on the TJ practical pit that has been used as a basis to convert the Reserve. The process used in converting the Coal Resources into Coal Reserves includes defining viable pit limits and applying mining cost, revenue and other modifying factors to the Coal Resources to estimate Coal Reserves.

Criteria	JORC Explanation	Commentary
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	All seams that have been modelled have used the quality information obtained from the resources, with an allowance for dilution and loss based on assumed rock qualities. Minimum Seam thickness defined as mineable was 1.0 m Minimum Separable thickness parting defined at 0.3 m
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling. The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). The mining dilution factors used. The mining recovery factors used.	The practical pit designs were developed as the basis of the reported quantities. These pits were designed based on a selected optimisation shell which were cross checked against the BESR for the project. The mining method utilizes appropriately sized excavator and truck fleets to achieve the coal selection, uncovering and mining. Geotechnical studies of the rock strength and other characteristics based on internal TJ parameter formed the basis of the pit design. Coal loss from Roof of 80mm and Floor modelled of 50 mm. Dilution total of 100mm (50mm from Roof and 50mm from Floor) Mining Global recovery of 96% Minimum width of 40m has been applied to the pit bottom

Criteria	JORC Explanation	Commentary
	Any minimum mining widths used. The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. The infrastructure requirements of the selected mining methods. `	optimisation process. The Inferred coal was identified in the seams with insufficient quality drill holes for Indicated Resource confidence, within the both the geological model and the pit designs. These inferred seams represent 16% and seams outside resource boundary represent 29% of the total planned LOM mineable quantity, Infrastructure required for the operation is already in place.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. Whether the metallurgical process is well-tested technology or novel in nature. The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. Any assumptions or allowances made for deleterious elements.	The ROM coal is planned to be dumped into graded stockpiles or directly to the crusher. The ROM coal will be feed to the crusher, sized and screened. The coal will be blended to the average grade being created within the period of time for the stockpile construction. Beyond blending and screening no further metallurgical processing is undertaken on the Product coal. Within the global losses there is an allowance that accounts for the loss in volume caused by conveying and general spillage.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste	TJ doesn't have the AMDAL yet since it is still on exploration status. TJ currently in the process of preparing

Criteria	JORC Explanation	Commentary
	rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	Exploration Reports, Feasibility Studies and an Environmental Impact Study (AMDAL).
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	All infrastructure have been in placed to support the production. The infrastructure location is at northern area of TJ (Bara Tabang area)
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study. The methodology used to estimate operating costs. Allowances made for the content of deleterious elements. The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products. The source of exchange rates used in the study. Derivation of transportation charges. The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	There was no plan to update the capital for the Project. Operating cost has been supplied by Client based on contracted rate and has been reviewed as a reasonable cost to be used for this study. Royalties are based on Government statutory royalties.

Criteria	JORC Explanation	Commentary
	The allowances made for royalties payable, both Government and private.	
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. .	Forward pricing in the economic model is based on the real dollar value of the coal as defined by the forecast coal price. All costs and revenues are based on a USD pricing basis so there is no exchange variation of the project financials.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. A customer and competitor analysis along with the identification of likely market windows for the product. Price and volume forecasts and the basis for these forecasts. For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	No other studies have been undertaken for this project, for market analysis. The current coal sales agreements are anticipated to be continued or renegotiated.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. NPV ranges and sensitivity to variations in the significant assumptions and inputs.	The economic pit limit were determined by a marginal cost versus revenue analysis.

Criteria	JORC Explanation	Commentary
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	TJ currently in the process of preparing an Environmental Impact Study (AMDAL).
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: Any identified material naturally occurring risks. The status of material legal agreements and marketing arrangements. The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	All mining project operate in an environment of geological uncertainty, RPM is not aware of any potential factor that could affect the operation viability. TJ currently in the process of preparing Exploration Reports, Feasibility Studies and an Environmental Impact Study (AMDAL) with a view to upgrading these concessions into Production Stage (IUP OP). The expected timeline is on first half of 2018.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories. Whether the result appropriately reflects the Competent Person's view of the deposit. The proportion of Probable Ore Reserves that have	All of the Measured category Coal Resource contained within the pit design transferred to Proved Coal Reserve after application of the appropriate modifying factors. All of the Indicated category Coal Resource contained within the pit design transferred to Probable Coal Reserve after application of the appropriate modifying factors

Criteria	JORC Explanation	Commentary
	been derived from Measured Mineral Resources (if any).	
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	Internal review by RPM senior staff as per finding in this report.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The Reserve estimate have been independently checked along with the pit shell coal quantity and Resource Estimation result. Life of mine plan has been developed to support the Reserve statement.

PT Bara Sejati

Appendix 4A
Table 1 JORC Compliance Check List For Resources and Exploration

Section 1 Sampling Techniques and Data

Criteria	JORC Explanation	Commentary

Sampling techniques	• Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.
	• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.
	• Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.
		• Core sampling for coal quality work took place using HQ (63mm) core in 2006 and 2008 drilling campaign. Core samples with > 90% recovery were used to model coal qualities. Coal core samples were sent to the laboratory with chain of custody paperwork.
		• Majority of the drill holes are full cored holes. Cores were logged by the rig geologist. The chip samples were not analysed and used in quality modelling.
		• A suite of downhole geophysical surveys, including Density, Gamma, and Calliper were typically run in the majority of drill holes. No drill hole deviation was completed due to vertical drilling. The geophysical logging was carried out by external contractor and subject to their internal calibration, quality assurance and quality control procedures. Geophysical logs were acquired to supplement the geologist's lithological description of the cores to:
		  • assist with ensuring that the core recoveries were satisfactory (> 90%); and,
		  • assist with correlation of the various seams and to demonstrate continuity of seam character.

Drilling techniques	• Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	• PCD bits using air and water are used to complete the open hole sections of drill holes. • Use of HQ-3 (triple tube barrel) follows Industry accepted Standards for acquisition of borecore.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may	• Linear drill hole core recovery was measured for all coal quality drill holes on a run by run basis. Actual recovered core lengths are measured with a tape measure and any core loss is recorded in geological logs, coal quality sample intervals and in the run by run drilling record field sheets.

Criteria	JORC Explanation	Commentary
	have occurred due to preferential loss/gain of fine/coarse material.	• Drill holes are full cored holes to prevent roof coal loss. • No bias was identified due to majority of core samples were approximately at 90%.
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. • The total length and percentage of the relevant intersections logged.	• A drill site geologist was present at all times during drilling operations. • Preliminary core logs were derived from lithological logging of drill core. • All holes were lithologically logged. The logging of the core samples is qualitative and detailed which includes rock type and numerous adjectives to describe the sample in terms of colour, grain size, bedding etc. all of which is entirely sufficient to describe the various lithologies and coal samples to support the coal resource estimation from a geological, geotechnical and coal quality consideration. Almost all holes were geophysically logged and field drill logs and field coal sample depths were subsequently reconciled against the geophysical logs. Only 4 drill holes were not geophysically logged and used in geological modelling.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• No splitting of core is undertaken in the field. Sample preparation was done in PT Sucofindo laboratory at Jakarta. • Coal samples were wrapped and sealed immediately once core logging was completed to minimise moisture loss to ensure the samples were representative of the in situ moisture. • The coal samples collected for quality modelling were from HQ core size (63mm). This core size provides sufficient sample mass for testing of raw coal parameters.

Criteria	JORC Explanation	Commentary
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	• The samples were submitted to PT Sucofindo laboratory for analysis. Both laboratories are internationally accredited and all analyses were conducted in accordance with appropriate international standards • All coal plies have been subjected to a proximate analysis (which includes IM, Ash, VM, FC), TM, TS and CV. • No QA-QC was performed directly to the laboratory. A thorough QAQC was performed by PT. Sucofindo as part of meeting requirements as accredited external laboratories. RPM performed QA-QC on the result of laboratory testing.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• The logging and sampling was supervised by SRK senior geologist. Core samples were acquired using the “full cored” method. The samples depths were adjusted using geophysical log data. No twinned holes were completed during the coring program. There are also several geotechnical holes, also drilled as fully cored holes. • The protocols for sample acquisition and data entry were developed by SRK. Data verification protocols were developed by RPM. The assaying was completed by external accredited laboratory. • Minor adjustment (~4% of total data) was made to the original assay data, which showed variation more than 10% compared to the normal line of cross plot graphs (RD). The adjusted results were then used for quality modelling, and the original data was kept.
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• Majority of drill hole collars were surveyed by Total Station, with the remaining collars coordinates were acquired by hand held GPS. The topography was derived from combination of high precision aerial survey (LIDAR) and ground topography. • The Project is using UTM 50N grid system. • The benchmarks were derived from high precision Geodetic GPS which tied to the Government survey control.

Criteria	JORC Explanation	Commentary
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• Drill hole line spacing is typically 500 m in most of the areas. • This is considered adequate for classification of Coal Resources to Indicated and Inferred category with due consideration for the collar survey, variance in coal seam thickness, coal quality and structural complexity. • Sample compositing to a seam basis has been applied whenever the samples were based on ply by ply basis.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• The geological data including samples, was gathered based on vertical drilling with the majority being supported with geophysical logging. This method is considered sufficient to the type of the deposit.
Sample security	• The measures taken to ensure sample security.	• All cores were geologically described by qualified field geologists. • Coal samples were stored in core trays on site. Samples were taken form the core boxes and bagged in PVC bags with hole and sample number, and sent to the external laboratories once sampling instructions were completed. • All sampling and sample labelling was undertaken by or supervised by the field geologist. • Samples were packed, handled and transported with normal care, documentation and chain of custody. • Coal is a bulk commodity so no high level security measures are deemed necessary since it is very unlikely to be subject to systematic material impact from sample tampering, theft or loss.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• Coal sampling method adopted was on a “ply-by-ply” basis and samples were plastic wrapped and sealed in PVC “splits” to minimise any moisture loss. • The quoted core recoveries were crosschecked against core photographs.

Section 2 Reporting of Exploration Results

Criteria	JORC Explanation	Commentary
Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. • The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• All concessions have valid IUP (mining lease), documentation. No material issues were identified regarding this matter. • The project is in exploration stage with valid license. Forestry permit is required to operate in the area.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• The exploration of the Pakar South was developed and supervised by SRK. A more detail discussion is shown in **Section 5.1** of the BS JORC Statement.
Geology	• Deposit type, geological setting and style of mineralisation.	• The Project concessions are within thick, multi seam deposits that occur within the Middle to Late Miocene Age Balikpapan Formation of the Kutai Basin. The structure of the deposit is the eastern limb of a broad synclinal structure plunging to the southeast. The seam dips less than 5 degree to the south west.
Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually material and should be reported. • Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• Samples are composited by weighting by mass if the samples were taken on ply by ply basis. No maximum and/or minimum cut-off were used in the modelling and estimation process.
Relationship between mineralisation widths and intercept length	• These relationship are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	• The geometry of the deposit is reasonably understood. This was based on the drill hole data and other geological information (regional geology and trial mining results). • Detail seam thicknesses are reported in apparent

Criteria	JORC Explanation	Commentary
	• If it is not known and only down hole lengths are reported, there should be a clear statement to this effect e.g. 'down hole length, true width not known)	thickness and provided in the Appendix B.
Drill hole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: • easting and northing of the drill hole collar • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar • dip and azimuth of the hole • down hole length and interception depth • hole length. • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	• A total of 155 full cored holes were used for modelling which cover the whole Pakar South area. Almost all of the holes (97%) were geophysically logged. • A more detail drill holes information, including location, seam thickness, depth and quality were provided in a separate file.
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• Maps and sections are provided in the report in the figures and appendices.
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• All information provided by Client including exploration results has been reviewed. This report references all available exploration results from the Client up to the commencement date of the Resource estimation.
Other substantive exploration data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	• Geotechnical and hydrogeological studies were completed, with the results of those studies being incorporated for pit optimization.
Further work	• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or	• At this time no further work is being planned, due to forestry permit requirement.

Criteria	JORC Explanation	Commentary
	large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	

Section 3 Estimation and Reporting of Mineral Resources

Criteria		Commentary

Database integrity	• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.
	• Data validation procedures used.
		• The database provided to RPM was mainly in Microsoft Excel format. Manual procedures have been set and used by RPM. To minimise errors in the database, several main steps were applied:
		  • Majority of drill holes in the model were geophysically logged and coal seam data entered into the geological database was reconciled against the logs.
		  • There are a number of underlying "business rules" built into the database that help insure consistency and integrity of data including, but not limited to:
		  • relational link between geological, down hole geophysical and coal quality data;
		  • restriction of data entry to the interval of the defined hole depth;
		  • basic statistics such as histogram for major quality parameters (CV, Ash & TS) and cross plots (CV, Ash & RD) to ensure data consistency and understanding errors if any; and,
		  • basic coal quality integrity checks such as ensuring data is within normal range limits, that proximate analyses add to 100 percent etc.
		  • Seam and stratigraphic picks and correlations were independently checked and rechecked by senior geological staff of RPM. After modelling, anomalous seam and interburden structure and thicknesses were interrogated and errors iteratively corrected from the database.
		• It is highly unlikely that there is significant corrupt data in the database, given the validation procedures

Criteria		Commentary
		above. • Some errors may still pass through to the geological and coal quality models, considering that coal is a bulk commodity of relative even consistency and the large number of drill holes on which the resource is based, such errors are unlikely to have a material impact on the resource estimate.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• RPM has completed several site visits to the area, with the most recent being undertaken by RPM senior staff, Mr. Gusti Sumardika, in December 2016. Mr. Gusti Sumardika is permanent employee of RPM and also a Competent Person Indonesia (CPI). The exploration is completed to a reasonably high standard. No major issues were identified.
Geological interpretation	• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. • Nature of the data used and of any assumptions made. • The effect, if any, of alternative interpretations on Mineral Resource estimation. • The use of geology in guiding and controlling Mineral Resource estimation. • The factors affecting continuity both of grade and geology.	• Geological interpretation was based on the drilling data with the majority of the holes being supported with geophysical log information. • RPM also used the regional geology study to support the geological interpretation of the deposit. • The confidence level of the deposit was determined based on the data distribution and geological complexity. • All necessary constraints which affect continuity of the coal seams were considered.
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	• The deposit covers area approx. 2,981 ha, with an approximate strike length of 2 km and approximate width 11 km in the BS concession. A set of plans are also provided in the report.
Estimation and modelling techniques	• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. • The availability of check estimates, previous estimates and/or mine production records and	• A three dimensional computer models were built using ABB MineScape software. Extrapolation distances for Coal Resource estimation were based on geological continuity (seam thickness, quality and structure). • Check estimates were undertaken by other competent geologist within RPM group and Bayan geologist to ensure the validity of the result. • The models were based on gridded modelling

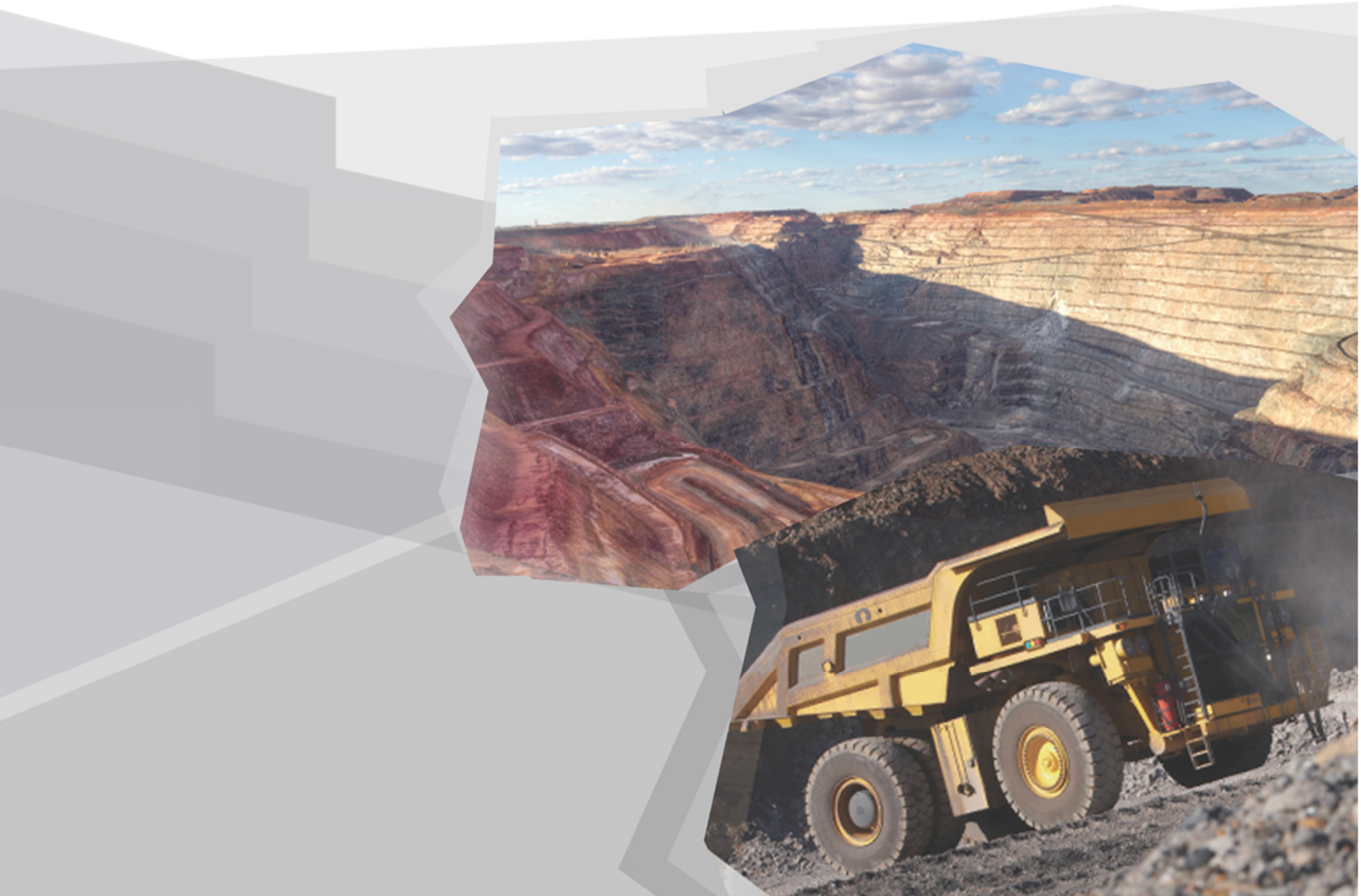
Criteria		Commentary
	whether the Mineral Resource estimate takes appropriate account of such data. • The assumptions made regarding recovery of by-products. • Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation). • In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. • Any assumptions behind modelling of selective mining units. • Any assumptions about correlation between variables. • Description of how the geological interpretation was used to control the resource estimates. • Discussion of basis for using or not using grade cutting or capping. • The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	approach. • No selective mining unit assumptions were used for modelling processes. • Model validation was undertaken by visually inspecting the model sections, structure and quality contour, etc. against drill hole data.
Moisture	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	• Tonnages are estimated on in situ basis based on in situ density derived from the Preston Sanders formula which uses the total and coal resource that were derived from laboratory analysis.
Cut-off parameters	• The basis of the adopted cut-off grade(s) or quality parameters applied.	• No cut-off grade has been used.
Mining factors or assumptions	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	• A Minimum thickness of 0.5m has been applied. • No mining losses and dilution factor was used for Resources estimation. • Selected mine optimisation results were used with the consideration of average depth of deep drilling to limit Coal Resources estimation. This to align with the reasonable prospect for eventual economic extraction.

Criteria		Commentary
Metallurgical factors or assumptions	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	• Coal is mined and sold as raw material, therefore no washing or metallurgical factors are required.
Environmental factors or assumptions	• Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	• The area is a non-forest cultivation zone, and no major river is found within the concession. Considering the circumstances, no assumptions has been made to consider the potential environment impact.
Bulk density	• Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. • The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit. • Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	• Coal Resources were reported on an in situ basis with the RD (in situ) being adjusted using the Preston-Sanders (1993) formula. Coal samples were analysed for Total Moisture, Inherent (air dried) Moisture.
Classification	• The basis for the classification of the Mineral	• The classification of Coal Resource categories,

Criteria		Commentary
	Resources into varying confidence categories. • Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). • Whether the result appropriately reflects the Competent Person's view of the deposit.	(Measured, Indicated and Inferred) is based on the opinion of the Competent Person based on drill spacing, data collection methods and the geological complexity. • The Competent Person is confident on the reliability of geological data and in the understanding of the geology including the continuity of the geology and coal quality. The estimate appropriately reflects the Competent Persons view of the deposit.
Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	• Coal Resources estimations were internally peer reviewed by RPM and also compared to Bayan's estimates. No fatal flaws were identified.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• Confidence levels were determined based on the Competent Person's view of the deposit geological complexity. The Competent Person was also used the Indonesian Coal Resources Guideline (SNI 2011) as a reference to define the confidence limit. RPM is of the opinion that this approach is reasonable considering the nature and the location of the deposit. Rounding has also been applied into Resource estimation to reflect relative accuracy. • The statement relates to global estimates. • Currently the Project is still in exploration stage, therefore no production data was available to be used for reconciliation.

PT Bara Sejati

Appendix 4B
Table 1 JORC Compliance Check List For Ore Reserves



Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	This JORC Reserve is estimated from JORC (2012) Code compliant Coal Resources Statement signed by Mr Oki Wijayanto. This Statement and the model associated with it formed the basis of the subsequent Coal Reserve estimate. Coal Resources are reported inclusive of the Coal Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site visits were undertaken by RPM Reserves Competent Person prior to the reference date of the Statement. The site visit only limited to Bayan operation at Tabang existing operation area. Others concession at North and South Pakar has not been operated yet.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	The Project is an undeveloped green field. A Life of Mine (LOM) plan has been developed based on the BS practical pit that has been used as a basis to estimate the Reserve. An LOM plan is considered by RPM to be equivalent to a Pre-feasibility study mine plan. The process used in converting the Coal Resources into Coal Reserves includes defining viable pit limits and applying mining cost, revenue and other modifying factors to the Coal Resources to estimate Coal Reserves.

Criteria	JORC Explanation	Commentary
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	All seams that have been modelled have used the quality information contained within the coal quality model, with an allowance for dilution and loss based on assumed rock qualities. No ash cut off has been applied. Minimum Seam thickness defined as mineable was 0.5 m Minimum Separable thickness parting defined at 0.3 m
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling. The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). The mining dilution factors used. The mining recovery factors used. Any minimum mining widths used.	The practical pit shell design was developed as the basis of the reported quantities. This pit was designed based on a selected optimisation shell which was cross checked against the Break Even Strip Ratio (BESR) for the project. The mining method utilizes appropriately sized excavator and truck fleets to achieve the coal selection, uncovering and mining. Geotechnical studies of the rock strength and other material characteristics undertaken at BS, determined the parameters used as the basis of the pit design. Coal loss from Roof of 80mm and Floor of 50 mm was modelled. Dilution total of 100mm (50mm from Roof and 50mm from Floor) Mining Global recovery of 96% applied. A minimum mining width of 40m has been applied in the pit bottom design at part of the optimisation process to

Criteria	JORC Explanation	Commentary
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. The infrastructure requirements of the selected mining methods. `	determine the pit shell. The Inferred coal was identified in the seams with insufficient quality drill holes for Measured or Indicated Resource confidence. This coal was identified wititihn the geological model and the pit designs. These inferred seams represent 3% of the total planned LOM mineable quantity within the pit shell. The BS project when developed will utilise the existing infrastructure at PT. Bara Tabang (BT) and PT. Fajar Sakti Prima (FSP), which are Bayan Subsidiary companys.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. Whether the metallurgical process is well-tested technology or novel in nature. The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. Any assumptions or allowances made for deleterious elements.	The ROM coal is planned to be dumped into graded stockpiles or directly to the ROM crusher. The ROM coal will be fed to the crusher, sized and screened. The coal will be blended to the average grade being created within the period of time for the stockpile construction. Beyond blending and screening no further metallurgical processing is undertaken on the Product coal. Within the global losses there is an allowance that accounts for the loss in volume caused by conveying and general spillage.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste	BS has already prepared the AMDAL which was used as the supporting documentation to the acquired IUP-

Criteria	JORC Explanation	Commentary
	rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	Operation licence.
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	All infrastructure is in place to support the production from the Project. The infrastructure location is at the northern end of BS (Bara Tabang area).
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study. The methodology used to estimate operating costs. Allowances made for the content of deleterious elements. The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products. The source of exchange rates used in the study. Derivation of transportation charges. The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. The allowances made for royalties payable, both Government and private.	The capital cost estimate for the Project has not been updated as part of the LOM. As all the infrastructure and facilities are in place for when the Project is developed and a mining contractor operation is envisaged the quantum of capital required is not significant. Operating cost has been supplied by Client based on the current contracted rates for operations in adjacent pits and these rates have been reviewed by RPM and are believed to be reasonable and in line with contractor mining rates that would be expected in the Indonesian coal mining industry. Barging and Balikpapan port charges are at the rate as experienced now by the Client in the logistics of its product coal handling Royalties are based on Government statutory royalties.

Criteria	JORC Explanation	Commentary
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. .	Forward pricing in the economic model is based on the real dollar value of the coal as defined by the forecast coal price of USD70/t for benchmark coal quality of 6322 kcal/kg gar CV. The benchmark price is adjusted to reflect the actual product coal quality. All costs and revenues are based on a USD pricing basis so there is no exchange variation of the project financials.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. A customer and competitor analysis along with the identification of likely market windows for the product. Price and volume forecasts and the basis for these forecasts. For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	No studies have been undertaken for this Project, for market analysis. Markets for this type of product coal produced in Indonesia are well established and product coal from the Clients adjacent operations are sold into these markets It is expected that the current coal sales agreements will be rolled over or continued as mining moves to the BS area.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. NPV ranges and sensitivity to variations in the significant assumptions and inputs.	The economic pit limits were determined by the marginal cost versus revenue analysis. The cash flow for the Project over the estimated 13 year mine life is positive also delivering a positive NPV at a discount factor of 10% which is commonly used to evaluate Indonesian coal projects. The economics of the project is most sensitive to the coal price used in the determination of the pit limits and the

Criteria	JORC Explanation	Commentary
		generation of the revenue cash flow.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	All the operation permits are in place to support the production stage of the Project.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: Any identified material naturally occurring risks. The status of material legal agreements and marketing arrangements. The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	All coal mining projects operate in an environment of geological uncertainty. RPM is not aware of any potential technical factors, legal, marketing or otherwise that could affect the operation viability.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories. Whether the result appropriately reflects the Competent Person's view of the deposit.	All of the Measured category Coal Resource contained within the pit design has been assigned to the Proved Coal Reserve category after the application of the appropriate modifying factors. All of the Indicated category Coal Resource contained

Criteria	JORC Explanation	Commentary
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	within the pit design has been transferred to the Probable Coal Reserve after the application of the appropriate modifying factors
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	Internal review has been undertaken by RPM senior staff and the outcome of the Reserve estimate has been confirmed.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should	The Reserve estimate is most sensitive to the prevailing long term coal price used to determine the pit limits and the BESR. The cost factors used in determining the pit limits and BESR are well known and understood from contractor mining operations being carried out on concessions adjacent to the Project.

Criteria	JORC Explanation	Commentary
	be compared with production data, where available.	

PT Cahaya Alam

Appendix 4A Table 1 JORC Compliance Check List For Resources and Exploration

Section 1 Sampling Techniques and Data

Criteria	JORC Explanation	Commentary

Sampling techniques	• Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.
	• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.
	• Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.
		• Core sampling for coal quality work took place using HQ (63mm) core in 2006 and 2008 drilling campaign. Core samples with > 90% recovery were used to model coal qualities. Coal core samples were sent to the laboratory with chain of custody paperwork.
		• Majority of the drill holes are full cored holes. Cores were logged by the rig geologist. The chip samples were not analysed and used in quality modelling.
		• A suite of downhole geophysical surveys, including Density, Gamma, and Calliper were typically run in the majority of drill holes. No drill hole deviation was completed due to vertical drilling. The geophysical logging was carried out by external contractor and subject to their internal calibration, quality assurance and quality control procedures. Geophysical logs were acquired to supplement the geologist's lithological description of the cores to:
		  • assist with ensuring that the core recoveries were satisfactory (> 90%); and,
		  • assist with correlation of the various seams and to demonstrate continuity of seam character.

Drilling techniques	• Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	• PCD bits using air and water are used to complete the open hole sections of drill holes. • Use of HQ-3 (triple tube barrel) follows Industry accepted Standards for acquisition of borecore.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may	• Linear drill hole core recovery was measured for all coal quality drill holes on a run by run basis. Actual recovered core lengths are measured with a tape measure and any core loss is recorded in geological logs, coal quality sample intervals and in the run by run drilling record field sheets.

Criteria	JORC Explanation	Commentary
	have occurred due to preferential loss/gain of fine/coarse material.	• Drill holes are full cored holes to prevent roof coal loss. • No bias was identified due to majority of core samples were approximately at 90%.
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. • The total length and percentage of the relevant intersections logged.	• A drill site geologist was present at all times during drilling operations. • Preliminary core logs were derived from lithological logging of drill core. • All holes were lithologically logged. The logging of the core samples is qualitative and detailed which includes rock type and numerous adjectives to describe the sample in terms of colour, grain size, bedding etc. all of which is entirely sufficient to describe the various lithologies and coal samples to support the coal resource estimation from a geological, geotechnical and coal quality consideration. All holes were geophysically logged and field drill logs and field coal sample depths were subsequently reconciled against the geophysical logs. It is noted that 4 drill holes without geophysical log were used to assist geological modelling, none are located within the CA concession.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• No splitting of core is undertaken in the field. Sample preparation was done in PT Sucofindo laboratory at Jakarta. • Coal samples were wrapped and sealed immediately once core logging was completed to minimise moisture loss to ensure the samples were representative of the in situ moisture. • The coal samples collected for quality modelling were from HQ core size (63mm). This core size provides sufficient sample mass for testing of raw coal parameters.
Quality of assay data and	• The nature, quality and appropriateness of the	• The samples were submitted to PT Sucofindo

Criteria	JORC Explanation	Commentary
laboratory tests	assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	laboratory for analysis. Both laboratories are internationally accredited and all analyses were conducted in accordance with appropriate international standards • All coal plies have been subjected to a proximate analysis (which includes IM, Ash, VM, FC), TM, TS and CV. • No QA-QC was performed directly to the laboratory. A thorough QAQC was performed by PT. Sucofindo as part of meeting requirements as accredited external laboratories. RPM performed QA-QC on the result of laboratory testing.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• The logging and sampling was supervised by SRK senior geologist. Core samples were acquired using the “full cored” method. The samples depths were adjusted using geophysical log data. No twinned holes were completed during the coring program. There are also several geotechnical holes, also drilled as fully cored holes. • The protocols for sample acquisition and data entry were developed by SRK. Data verification protocols were developed by PT.RPM. The assaying was completed by external accredited laboratory. • Minor adjustment (~4% of total data) was made to the original assay data, which showed variation more than 10% compared to the normal line of cross plot graphs (RD). The adjusted results were then used for quality modelling, and the original data was kept.
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• A limited drill hole collars were surveyed by Total Station, with the remaining collars coordinates were acquired by hand held GPS. The topography was derived from combination of high precision aerial survey (LIDAR) and ground topography. • The Project is using UTM 50N grid system. • The benchmarks were derived from high precision Geodetic GPS which tied to the Government survey control.

Criteria	JORC Explanation	Commentary
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• Drill hole line spacing is typically 500 m in most of the areas. • This is considered adequate for classification of Coal Resources to Indicated and Inferred category with due consideration for the collar survey, variance in coal seam thickness, coal quality and structural complexity. • Sample compositing to a seam basis has been applied whenever the samples were based on ply by ply basis.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• The geological data including samples, was gathered based on vertical drilling with the majority being supported with geophysical logging. This method is considered sufficient to the type of the deposit.
Sample security	• The measures taken to ensure sample security.	• All cores were geologically described by qualified field geologists. • Coal samples were stored in core trays on site. Samples were taken form the core boxes and bagged in PVC bags with hole and sample number, and sent to the external laboratories once sampling instructions were completed. • All sampling and sample labelling was undertaken by or supervised by the field geologist. • Samples were packed, handled and transported with normal care, documentation and chain of custody. • Coal is a bulk commodity so no high level security measures are deemed necessary since it is very unlikely to be subject to systematic material impact from sample tampering, theft or loss.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• Coal sampling method adopted was on a “ply-by-ply” basis and samples were plastic wrapped and sealed in PVC “splits” to minimise any moisture loss. • The quoted core recoveries were crosschecked against core photographs.

Section 2 Reporting of Exploration Results

Criteria	JORC Explanation	Commentary
Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. • The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• All concessions have valid IUP (mining lease), documentation. No material issues were identified regarding this matter. • The project is in exploration stage with valid license. Forestry permit is required to operate in the area.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• The exploration of the Pakar South was developed and supervised by SRK. A more detail discussion is shown in **Section 5.1** of the CA JORC Statement.
Geology	• Deposit type, geological setting and style of mineralisation.	• The Project concessions are within thick, multi seam deposits that occur within the Middle to Late Miocene Age Balikpapan Formation of the Kutai Basin. The structure of the deposit is the eastern limb of a broad synclinal structure plunging to the southeast. The seam dips less than 5 degree to the south west.
Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually material and should be reported. • Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• Samples are composited by weighting by mass if the samples were taken on ply by ply basis. No maximum and/or minimum cut-off were used in the modelling and estimation process.
Relationship between mineralisation widths and intercept length	• These relationship are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be	• The geometry of the deposit is reasonably understood. This was based on the drill hole data and other geological information, including regional geology. • Detail seam thicknesses are reported in apparent thickness and provided in the Appendix B.

Criteria	JORC Explanation	Commentary
	reported. • If it is not known and only down hole lengths are reported, there should be a clear statement to this effect e.g. 'down hole length, true width not known)	

Drill hole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:
	  • easting and northing of the drill hole collar
	  • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar
	  • dip and azimuth of the hole
	  • down hole length and interception depth
	• hole length.
	• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.
		• A total of 155 full cored holes were used for modelling which cover the whole Pakar South area. Almost all of the holes (97%) were geophysically logged.
		• A more detail drill holes information, including location, seam thickness, depth and quality were provided in a separate file.

Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• Maps and sections are provided in the report in the figures and appendices.
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• All information provided by Client including exploration results has been reviewed. This report references all available exploration results from the Client up to the commencement date of the Resource estimation.
Other substantive exploration data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	• Geotechnical and hydrogeological studies were completed, with the results of those studies being incorporated for pit optimization.

Criteria	JORC Explanation	Commentary
Further work	• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• At this time no further work is being planned, due to forestry permit requirement.

Section 3 Estimation and Reporting of Mineral Resources

Criteria		Commentary

Database integrity	• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.
	• Data validation procedures used.
		• The database provided to RPM was mainly in Microsoft Excel format. Manual procedures have been set and used by RPM. To minimise errors in the database, several main steps were applied:
		  • Majority of drill holes in the model were geophysically logged and coal seam data entered into the geological database was reconciled against the logs.
		  • There are a number of underlying "business rules" built into the database that help insure consistency and integrity of data including, but not limited to:
		  • relational link between geological, down hole geophysical and coal quality data;
		  • restriction of data entry to the interval of the defined hole depth;
		  • basic statistics such as histogram for major quality parameters (CV, Ash & TS) and cross plots (CV, Ash & RD) to ensure data consistency and understanding errors if any; and,
		  • basic coal quality integrity checks such as ensuring data is within normal range limits, that proximate analyses add to 100 percent etc.
		  • Seam and stratigraphic picks and correlations were independently checked and rechecked by senior geological staff of RPM. After modelling, anomalous seam and interburden structure and thicknesses were interrogated and errors iteratively corrected from the database.
		• It is highly unlikely that there is significant corrupt data in the database, given the validation procedures

Criteria		Commentary
		above. • Some errors may still pass through to the geological and coal quality models, considering that coal is a bulk commodity of relative even consistency and the large number of drill holes on which the resource is based, such errors are unlikely to have a material impact on the resource estimate.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• RPM has completed several site visits to the area, with the most recent being undertaken by RPM senior staff, Mr. Gusti Sumardika, in December 2016. Mr. Gusti Sumardika is permanent employee of RPM and also a Competent Person Indonesia (CPI). The exploration is completed to a reasonably high standard. No major issues were identified.
Geological interpretation	• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. • Nature of the data used and of any assumptions made. • The effect, if any, of alternative interpretations on Mineral Resource estimation. • The use of geology in guiding and controlling Mineral Resource estimation. • The factors affecting continuity both of grade and geology.	• Geological interpretation was based on the drilling data with the majority of the holes being supported with geophysical log information. • RPM also used the regional geology study to support the geological interpretation of the deposit. • The confidence level of the deposit was determined based on the data distribution and geological complexity. • All necessary constraints which affect continuity of the coal seams were considered.
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	• The deposit covers area approx. 3,457 ha, with an approximate strike length of 3.5 km and approximate width 9 km in the CA concession. A set of plans are also provided in the report.
Estimation and modelling techniques	• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. • The availability of check estimates, previous estimates and/or mine production records and	• A three dimensional computer models were built using ABB MineScape software. Extrapolation distances for Coal Resource estimation were based on geological continuity (seam thickness, quality and structure). • Check estimates were undertaken by other competent geologist within RPM group and Bayan geologist to ensure the validity of the result. • The models were based on gridded modelling

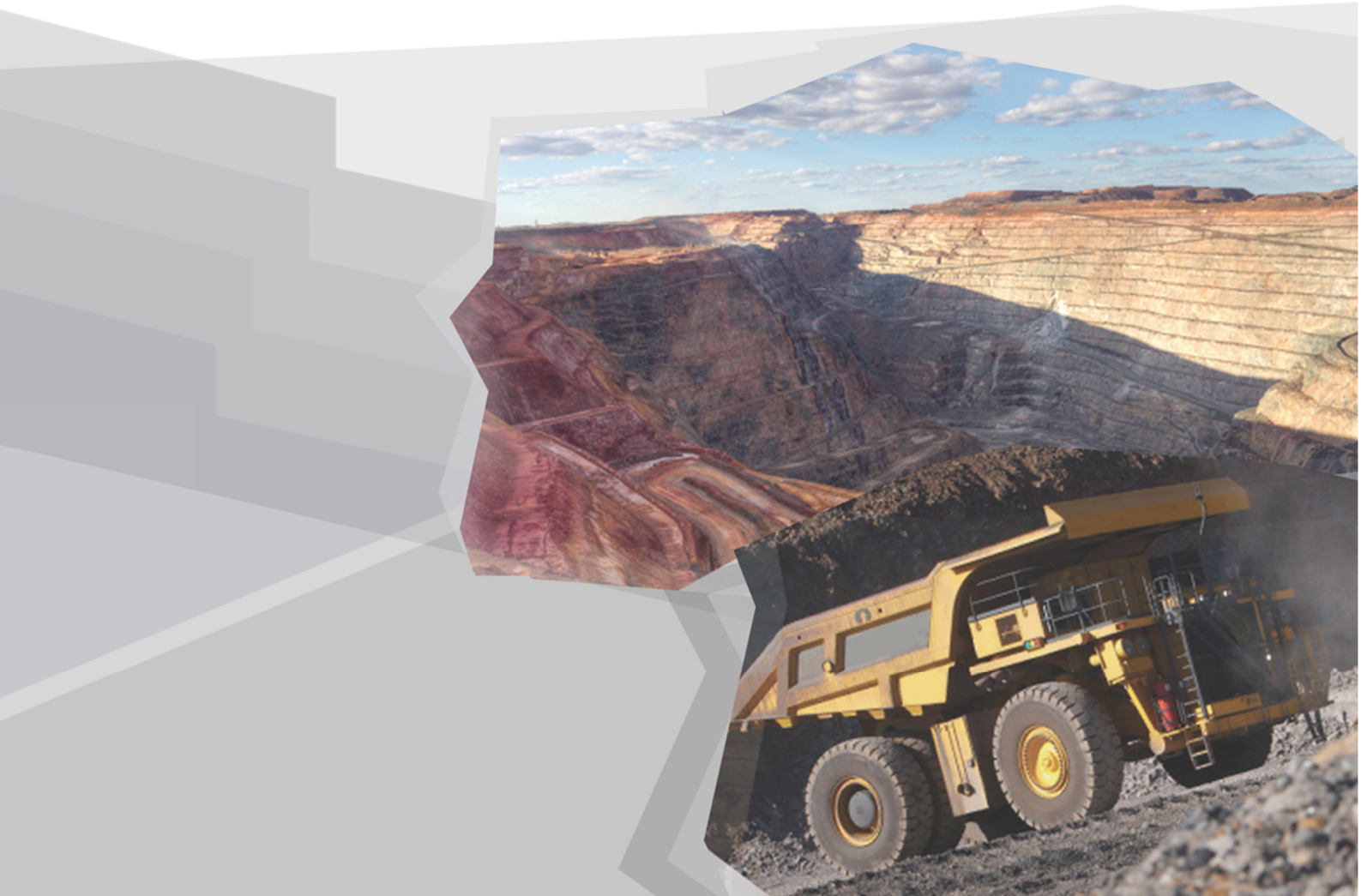
Criteria		Commentary
	whether the Mineral Resource estimate takes appropriate account of such data. • The assumptions made regarding recovery of by-products. • Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation). • In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. • Any assumptions behind modelling of selective mining units. • Any assumptions about correlation between variables. • Description of how the geological interpretation was used to control the resource estimates. • Discussion of basis for using or not using grade cutting or capping. • The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	approach. • No selective mining unit assumptions were used for modelling processes. • Model validation was undertaken by visually inspecting the model sections, structure and quality contour, etc. against drill hole data.
Moisture	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	• Tonnages are estimated on in situ basis based on in situ density derived from the Preston Sanders formula which uses the total and coal resource that were derived from laboratory analysis.
Cut-off parameters	• The basis of the adopted cut-off grade(s) or quality parameters applied.	• No cut-off grade has been used.
Mining factors or assumptions	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	• A Minimum thickness of 0.5m has been applied. • No mining losses and dilution factor was used for Resources estimation. • Selected mine optimisation results were used with the consideration of average depth of deep drilling to limit Coal Resources estimation. This to align with the reasonable prospect for eventual economic extraction.

Criteria		Commentary
Metallurgical factors or assumptions	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	• Coal is mined and sold as raw material, therefore no washing or metallurgical factors are required.
Environmental factors or assumptions	• Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	• The area is a non-forest cultivation zone, and no major river is found within the concession. Considering the circumstances, no assumptions has been made to consider the potential environment impact.
Bulk density	• Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. • The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit. • Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	• Coal Resources were reported on an in situ basis with the RD (in situ) being adjusted using the Preston-Sanders (1993) formula. Coal samples were analysed for Total Moisture, Inherent (air dried) Moisture.
Classification	• The basis for the classification of the Mineral	• The classification of Coal Resource categories,

Criteria		Commentary
	Resources into varying confidence categories. • Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). • Whether the result appropriately reflects the Competent Person's view of the deposit.	(Measured, Indicated and Inferred) is based on the opinion of the Competent Person based on drill spacing, data collection methods and the geological complexity. • The Competent Person is confident on the reliability of geological data and in the understanding of the geology including the continuity of the geology and coal quality. The estimate appropriately reflects the Competent Persons view of the deposit.
Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	• Coal Resources estimations were internally peer reviewed by RPM and also compared to Bayan's estimates. No fatal flaws were identified.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• Confidence levels were determined based on the Competent Person's view of the deposit geological complexity. The Competent Person was also used the Indonesian Coal Resources Guideline (SNI 2011) as a reference to define the confidence limit. RPM is of the opinion that this approach is reasonable considering the nature and the location of the deposit. Rounding has also been applied into Resource estimation to reflect relative accuracy. • The statement relates to global estimates. • Currently the Project is still in exploration stage, therefore no production data was available to be used for reconciliation.

PT Cahaya Alam

Appendix 4B
Table 1 JORC Compliance Check List For Ore Reserves



Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	This JORC Reserve is estimated from JORC (2012) Code compliant Coal Resources Statement signed by Mr Oki Wijayanto. This Statement and the model associated with it formed the basis of the subsequent Coal Reserve estimate. Coal Resources are reported inclusive of the Coal Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site visits were undertaken by RPM Reserves Competent Person prior to the reference date of the Statement. The site visit only limited to Bayan operation at Tabang existing operation area. Others concession at North and South Pakar has not been operated yet.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	The Project is an undeveloped green field. A life of Mine (LOM) plan has been developed based on the CA practical pit that has been used as a basis to estimate the Reserve. A LOM plan is considered by RPM to be equivalent to a Pre-feasibility study mine plan. The process used in converting the Coal Resources into Coal Reserves includes defining viable pit limits and

Criteria	JORC Explanation	Commentary
		applying mining cost, revenue and other modifying factors to the Coal Resources to estimate Coal Reserves.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	All seams that have been modelled have used the quality information contained within the coal quality model, with an allowance for dilution and loss based on assumed rock qualities. No ash cut off has been applied. Minimum Seam thickness defined as mineable was 0.5 m Minimum Separable thickness parting defined at 0.3 m
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling. The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). The mining dilution factors used.	The practical pit shell design was developed as the basis of the reported quantities. This pit was designed base on a selected optimisation shell which was cross checked against the Break Even Strip Ratio (BESR) for the project. The mining method utilizes appropriately sized excavator and truck fleets to achieve the coal selection, uncovering and mining. Geotechnical studies of the rock strength and other material characteristics undertaken at CA determined the parameters used as the basis of the pit design. Coal loss from Roof of 80mm and Floor of 50 mm was modelled. Dilution total of 100mm (50mm from Roof and 50mm from Floor)

Criteria	JORC Explanation	Commentary
	The mining recovery factors used. Any minimum mining widths used. The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. The infrastructure requirements of the selected mining methods. `	Mining Global recovery of 96% applied A minimum mining width of 40m has been applied in the pit bottom design as part of the optimisation process to determine the pit shell.. The Inferred coal was identified in the seams with insufficient quality drill holes for Measured or Indicated Resource confidence. This coal was identified within the geological model and the pit designs. These Inferred seams represent 37% of the within theoverall coal resource boundary and 21% of the total planned LOM mineable quantity. The CA project when developed will utilise the existing infrastructure at PT. Bara Tabang (BT) and PT. Fajar Sakti Prima (FSP) which are Bayan Subsidiary companys.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. Whether the metallurgical process is well-tested technology or novel in nature. The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. Any assumptions or allowances made for deleterious elements.	The ROM coal is planned to be dumped into graded stockpiles or directly to the crusher. The ROM coal will be feed to the ROM crusher, sized and screened. The coal will be blended to the average grade being created within the period of time for the stockpile construction. Beyond blending and screening no further metallurgical processing is undertaken on the Product coal. Within the global losses there is an allowance that accounts for the loss in volume caused by conveying and general spillage.

Criteria	JORC Explanation	Commentary
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	CA has already prepared the AMDAL which was used as the supporting documentation to the acquired IUP-Operation licence.
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	All infrastructure is in place to support the production from the project. The infrastructure location is at the northern end of CA (Bara Tabang area)
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study. The methodology used to estimate operating costs. Allowances made for the content of deleterious elements. The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products. The source of exchange rates used in the study. Derivation of transportation charges. The basis for forecasting or source of treatment and	The capital cost estimate for the Project has not been updated as part of the LOM. As all the infrastructure and facilities are in place for when the Project is developed and a mining contractor operation is envisaged the quantum of capital required is not significant.Operating cost has been supplied by Client based on the current contracted rates for operations in adjacent pits and these rates have been reviewed by RPM and are believed to be reasonable and in line with contractor mining rates that would be expected in the Indonesian coal mining industry. Barging and Balikpapan port charges are at the rate as experienced now by the Client in the logistics of its product coal handling Royalties are based on Government statutory royalties.

Criteria	JORC Explanation	Commentary
	refining charges, penalties for failure to meet specification, etc. The allowances made for royalties payable, both Government and private.	
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. .	Forward pricing in the economic model is based on the real dollar value of the coal as defined by the forecast coal price of USD70/t for benchmark coal quality of 6322 kcal/kg gar CV. The benchmark price is adjusted to reflect the actual product coal quality. All costs and revenues are based on a USD pricing basis so there is no exchange variation of the project financials.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. A customer and competitor analysis along with the identification of likely market windows for the product. Price and volume forecasts and the basis for these forecasts. For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	No studies have been undertaken for this Project, for market analysis. Markets for this type of product coal produced in Indonesia are well established and product coal from the Clients adjacent operations are sold into these markets It is expected the current coal sales agreements will be rolled over or continued as mining moves to the CA area.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	The economic pit limits were determined by the marginal cost versus revenue analysis. The cash flow for the Project over the estimated 13 year mine life is positive also delivering a positive NPV at a

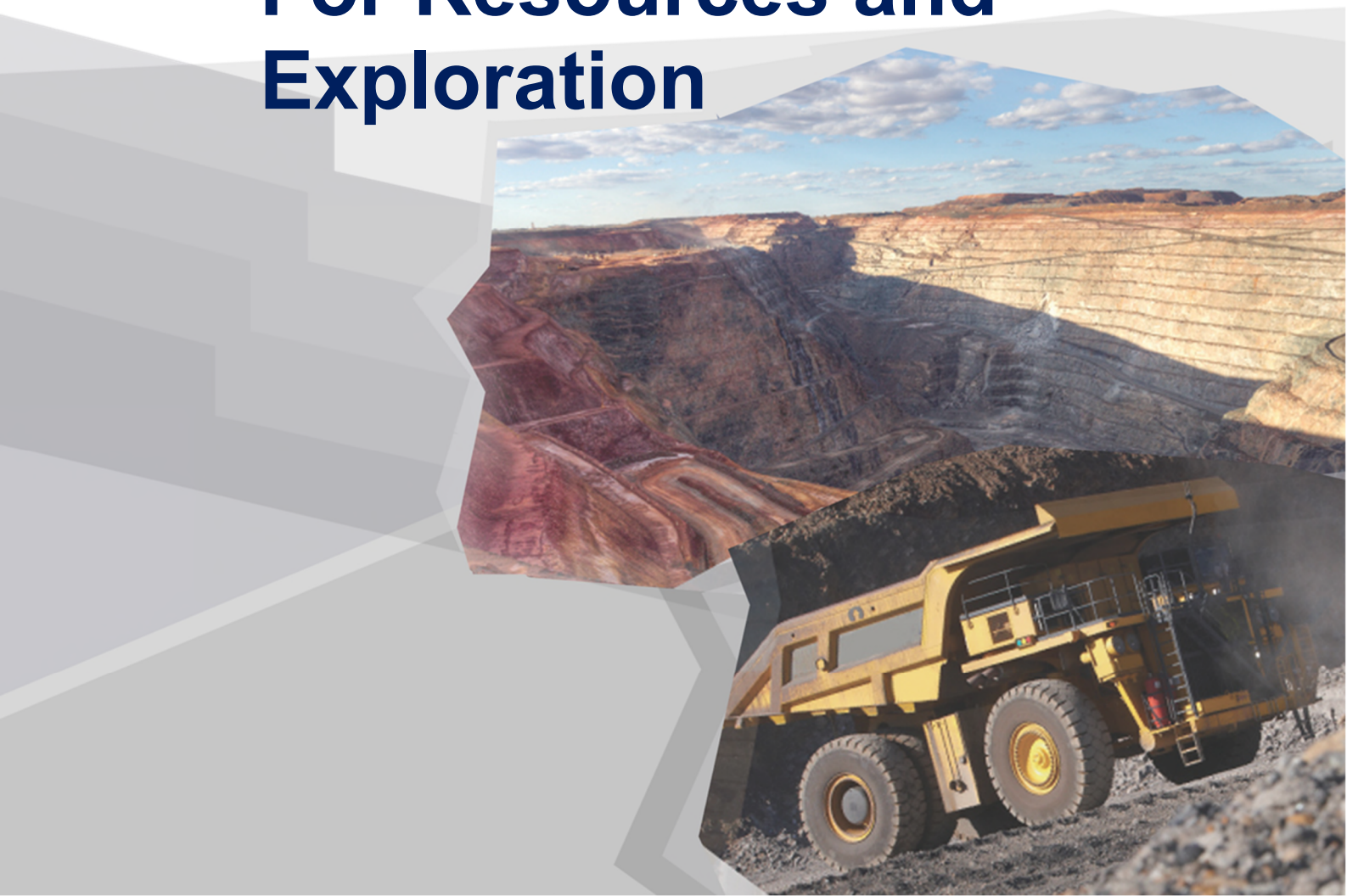
Criteria	JORC Explanation	Commentary
	NPV ranges and sensitivity to variations in the significant assumptions and inputs.	discount factor of 10%which is commonly used to evaluate Indonesian coal projects. The economics of the project is most sensitive to the coal price used in the determination of the pit limits and the generation of the revenue cash flow.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	All the operation permits are in place to support the production stage of the project.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: Any identified material naturally occurring risks. The status of material legal agreements and marketing arrangements. The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	All coal mining projects operate in an environment of geological uncertainty, RPM is not aware of any potential technical factors, legal, marketing or otherwise that could affect the operation viability.

Criteria	JORC Explanation	Commentary
Classification	The basis for the classification of the Ore Reserves into varying confidence categories. Whether the result appropriately reflects the Competent Person's view of the deposit. The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	All of the Measured category Coal Resource contained within the pit design has been assigned to the Proved Coal Reserve category after the application of the appropriate modifying factors. All of the Indicated category Coal Resource contained within the pit design has been assigned to Probable Coal Reserve after the application of the appropriate modifying factors
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	Internal review has been undertaken by RPM senior staff and the outcome of the Reserve estimate has been confirmed.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors	The Reserve estimate is most sensitive to the prevailing long term coal price used to determine the pit limits and the BESR. The cost factors used in determining the pit limits and BESR are well know known and understood from contractor mining operations being carried out in concession adjacent to the Project

Criteria	JORC Explanation	Commentary
	that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	

PT Sumber Api

Appendix 4A
Table 1 JORC Compliance Check List For Resources and Exploration



Section 1 Sampling Techniques and Data

Criteria	JORC Explanation	Commentary

Sampling techniques	• Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.
	• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.
	• Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.
		• Core sampling for coal quality work took place using HQ (63mm) core in 2006 and 2008 drilling campaign. Core samples with > 90% recovery were used to model coal qualities. Coal core samples were sent to the laboratory with chain of custody paperwork.
		• Majority of the drill holes are full cored holes. Cores were logged by the rig geologist. The chip samples were not analysed and used in quality modelling.
		• A suite of downhole geophysical surveys, including Density, Gamma, and Calliper were typically run in the majority of drill holes. No drill hole deviation was completed due to vertical drilling. The geophysical logging was carried out by external contractor and subject to their internal calibration, quality assurance and quality control procedures. Geophysical logs were acquired to supplement the geologist's lithological description of the cores to:
		  • assist with ensuring that the core recoveries were satisfactory (> 90%); and,
		  • assist with correlation of the various seams and to demonstrate continuity of seam character.

Drilling techniques	• Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	• PCD bits using air and water are used to complete the open hole sections of drill holes. • Use of HQ-3 (triple tube barrel) follows Industry accepted Standards for acquisition of borecore.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may	• Linear drill hole core recovery was measured for all coal quality drill holes on a run by run basis. Actual recovered core lengths are measured with a tape measure and any core loss is recorded in geological logs, coal quality sample intervals and in the run by run drilling record field sheets.

Criteria	JORC Explanation	Commentary
	have occurred due to preferential loss/gain of fine/coarse material.	• Drill holes are full cored holes to prevent roof coal loss. • No bias was identified due to majority of core samples were approximately at 90%.
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. • The total length and percentage of the relevant intersections logged.	• A drill site geologist was present at all times during drilling operations. • Preliminary core logs were derived from lithological logging of drill core. • All holes were lithologically logged. The logging of the core samples is qualitative and detailed which includes rock type and numerous adjectives to describe the sample in terms of colour, grain size, bedding etc. all of which is entirely sufficient to describe the various lithologies and coal samples to support the coal resource estimation from a geological, geotechnical and coal quality consideration. All holes were geophysically logged and field drill logs and field coal sample depths were subsequently reconciled against the geophysical logs. It is noted that 4 drill holes without geophysical log were used to assist geological modelling, none are located within the SA concession.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• No splitting of core is undertaken in the field. Sample preparation was done in PT Sucofindo laboratory at Jakarta. • Coal samples were wrapped and sealed immediately once core logging was completed to minimise moisture loss to ensure the samples were representative of the in situ moisture. • The coal samples collected for quality modelling were from HQ core size (63mm). This core size provides sufficient sample mass for testing of raw coal parameters.
Quality of assay data and	• The nature, quality and appropriateness of the	• The samples were submitted to PT Sucofindo

Criteria	JORC Explanation	Commentary
laboratory tests	assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	laboratory for analysis. Both laboratories are internationally accredited and all analyses were conducted in accordance with appropriate international standards • All coal plies have been subjected to a proximate analysis (which includes IM, Ash, VM, FC), TM, TS and CV. • No QA-QC was performed directly to the laboratory. A thorough QAQC was performed by PT. Sucofindo as part of meeting requirements as accredited external laboratories. RPM performed QA-QC on the result of laboratory testing.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• The logging and sampling was supervised by SRK senior geologist. Core samples were acquired using the “full cored” method. The samples depths were adjusted using geophysical log data. No twinned holes were completed during the coring program. There are also several geotechnical holes, also drilled as fully cored holes. • The protocols for sample acquisition and data entry were developed by SRK. Data verification protocols were developed by PT.RPM. The assaying was completed by external accredited laboratory. • Minor adjustment (~4% of total data) was made to the original assay data, which showed variation more than 10% compared to the normal line of cross plot graphs (RD). The adjusted results were then used for quality modelling, and the original data was kept.
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• A limited drill hole collars were surveyed by Total Station, with the remaining collars coordinates were acquired by hand held GPS. The topography was derived from combination of high precision aerial survey (LIDAR) and ground topography. • The Project is using UTM 50N grid system. • The benchmarks were derived from high precision Geodetic GPS which tied to the Government survey control.

Criteria	JORC Explanation	Commentary
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• Limited and scattered drill holes, drill hole spacing in eastern area is 600 m and continuous to adjacent concession to the south, PT Cahaya Alam. • This is considered adequate for classification of Coal Resources to Indicated and Inferred category with due consideration for the collar survey, variance in coal seam thickness, coal quality and structural complexity. • Sample compositing to a seam basis has been applied whenever the samples were based on ply by ply basis.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• The geological data including samples, was gathered based on vertical drilling with the majority being supported with geophysical logging. This method is considered sufficient to the type of the deposit.
Sample security	• The measures taken to ensure sample security.	• All cores were geologically described by qualified field geologists. • Coal samples were stored in core trays on site. Samples were taken form the core boxes and bagged in PVC bags with hole and sample number, and sent to the external laboratories once sampling instructions were completed. • All sampling and sample labelling was undertaken by or supervised by the field geologist. • Samples were packed, handled and transported with normal care, documentation and chain of custody. • Coal is a bulk commodity so no high level security measures are deemed necessary since it is very unlikely to be subject to systematic material impact from sample tampering, theft or loss.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• Coal sampling method adopted was on a “ply-by-ply” basis and samples were plastic wrapped and sealed in PVC “splits” to minimise any moisture loss. • The quoted core recoveries were crosschecked against core photographs.

Section 2 Reporting of Exploration Results

Criteria	JORC Explanation	Commentary
Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. • The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• All concessions have valid IUP (mining lease), documentation. No material issues were identified regarding this matter. • The project is in exploration stage with valid license. Forestry permit is required to operate in the area.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• The exploration of the Pakar South was developed and supervised by SRK. A more detail discussion is shown in **Section 5.1** of the SA JORC Statement.
Geology	• Deposit type, geological setting and style of mineralisation.	• The Project concessions are within thick, multi seam deposits that occur within the Middle to Late Miocene Age Balikpapan Formation of the Kutai Basin. The structure of the deposit is the eastern limb of a broad synclinal structure plunging to the southeast. The seam dips less than 5 degree to the south west.
Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually material and should be reported. • Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• Samples are composited by weighting by mass if the samples were taken on ply by ply basis. No maximum and/or minimum cut-off were used in the modelling and estimation process.
Relationship between mineralisation widths and intercept length	• These relationship are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. • If it is not known and only down hole lengths are	• The geometry of the deposit is reasonably understood. This was based on the drill hole data and other geological information, including regional geology. • Detail seam thicknesses are reported in apparent thickness and provided in the Appendix B.

Criteria	JORC Explanation	Commentary
	reported, there should be a clear statement to this effect e.g. 'down hole length, true width not known)	

Drill hole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:
	  • easting and northing of the drill hole collar
	  • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar
	  • dip and azimuth of the hole
	  • down hole length and interception depth
	• hole length.
	• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.
		• A total of 155 full cored holes were used for modelling which cover the whole South Pakar area. Almost all of the holes (97%) were geophysically logged.
		• A more detail drill holes information, including location, seam thickness, depth and quality were provided in a separate file.

Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• Maps and sections are provided in the report in the figures and appendices.
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• All information provided by Client including exploration results has been reviewed. This report references all available exploration results from the Client up to the commencement date of the Resource estimation.
Other substantive exploration data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	• Geotechnical and hydrogeological studies were completed, with the results of those studies being incorporated for pit optimization.
Further work	• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	• At this time no further work is being planned, due to forestry permit requirement.

Criteria	JORC Explanation	Commentary
	• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	

Section 3 Estimation and Reporting of Mineral Resources

Criteria		Commentary

Database integrity	• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.
	• Data validation procedures used.
		• The database provided to RPM was mainly in Microsoft Excel format. Manual procedures have been set and used by RPM. To minimise errors in the database, several main steps were applied:
		  • Majority of drill holes in the model were geophysically logged and coal seam data entered into the geological database was reconciled against the logs.
		  • There are a number of underlying "business rules" built into the database that help insure consistency and integrity of data including, but not limited to:
		  • relational link between geological, down hole geophysical and coal quality data;
		  • restriction of data entry to the interval of the defined hole depth;
		  • basic statistics such as histogram for major quality parameters (CV, Ash & TS) and cross plots (CV, Ash & RD) to ensure data consistency and understanding errors if any; and,
		  • basic coal quality integrity checks such as ensuring data is within normal range limits, that proximate analyses add to 100 percent etc.
		  • Seam and stratigraphic picks and correlations were independently checked and rechecked by senior geological staff of RPM. After modelling, anomalous seam and interburden structure and thicknesses were interrogated and errors iteratively corrected from the database.
		• It is highly unlikely that there is significant corrupt data in the database, given the validation procedures

Criteria		Commentary
		above. • Some errors may still pass through to the geological and coal quality models, considering that coal is a bulk commodity of relative even consistency and the large number of drill holes on which the resource is based, such errors are unlikely to have a material impact on the resource estimate.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• RPM has completed several site visits to the area, with the most recent being undertaken by RPM senior staff, Mr. Gusti Sumardika, in December 2016. Mr. Gusti Sumardika is permanent employee of RPM and also a Competent Person Indonesia (CPI). The exploration is completed to a reasonably high standard. No major issues were identified.
Geological interpretation	• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. • Nature of the data used and of any assumptions made. • The effect, if any, of alternative interpretations on Mineral Resource estimation. • The use of geology in guiding and controlling Mineral Resource estimation. • The factors affecting continuity both of grade and geology.	• Geological interpretation was based on the drilling data with the majority of the holes being supported with geophysical log information. • RPM also used the regional geology study to support the geological interpretation of the deposit. • The confidence level of the deposit was determined based on the data distribution and geological complexity. • All necessary constraints which affect continuity of the coal seams were considered.
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	• The deposit covers area approx. 2,364 ha, with an approximate strike length of 2 km and approximate width 7 km in SA. A set of plans are also provided in the report.
Estimation and modelling techniques	• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. • The availability of check estimates, previous estimates and/or mine production records and	• A three dimensional computer models were built using ABB MineScape software. Extrapolation distances for Coal Resource estimation were based on geological continuity (seam thickness, quality and structure). • Check estimates were undertaken by other competent geologist within RPM group and Bayan geologist to ensure the validity of the result. • The models were based on gridded modelling

Criteria		Commentary
	whether the Mineral Resource estimate takes appropriate account of such data. • The assumptions made regarding recovery of by-products. • Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation). • In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. • Any assumptions behind modelling of selective mining units. • Any assumptions about correlation between variables. • Description of how the geological interpretation was used to control the resource estimates. • Discussion of basis for using or not using grade cutting or capping. • The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	approach. • No selective mining unit assumptions were used for modelling processes. • Model validation was undertaken by visually inspecting the model sections, structure and quality contour, etc. against drill hole data.
Moisture	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	• Tonnages are estimated on in situ basis based on in situ density derived from the Preston Sanders formula which uses the total and coal resource that were derived from laboratory analysis.
Cut-off parameters	• The basis of the adopted cut-off grade(s) or quality parameters applied.	• No cut-off grade has been used.
Mining factors or assumptions	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	• A Minimum thickness of 0.5m has been applied. • No mining losses and dilution factor was used for Resources estimation. • Selected mine optimisation results were used with the consideration of average depth of deep drilling to limit Coal Resources estimation. This to align with the reasonable prospect for eventual economic extraction.

Criteria		Commentary
Metallurgical factors or assumptions	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	• Coal is mined and sold as raw material, therefore no washing or metallurgical factors are required.
Environmental factors or assumptions	• Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	• The area is a non-forest cultivation zone, and no major river is found within the concession. Considering the circumstances, no assumptions has been made to consider the potential environment impact.
Bulk density	• Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. • The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit. • Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	• Coal Resources were reported on an in situ basis with the RD (in situ) being adjusted using the Preston-Sanders (1993) formula. Coal samples were analysed for Total Moisture, Inherent (air dried) Moisture.
Classification	• The basis for the classification of the Mineral	• The classification of Coal Resource categories,

Criteria		Commentary
	Resources into varying confidence categories. • Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). • Whether the result appropriately reflects the Competent Person's view of the deposit.	(Measured, Indicated and Inferred) is based on the opinion of the Competent Person based on drill spacing, data collection methods and the geological complexity. • The Competent Person is confident on the reliability of geological data and in the understanding of the geology including the continuity of the geology and coal quality. The estimate appropriately reflects the Competent Persons view of the deposit.
Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	• Coal Resources estimations were internally peer reviewed by RPM and also compared to Bayan's estimates. No fatal flaws were identified.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• Confidence levels were determined based on the Competent Person's view of the deposit geological complexity. The Competent Person was also used the Indonesian Coal Resources Guideline (SNI 2011) as a reference to define the confidence limit. RPM is of the opinion that this approach is reasonable considering the nature and the location of the deposit. Rounding has also been applied into Resource estimation to reflect relative accuracy. • The statement relates to global estimates. • Currently the Project is still in exploration stage, therefore no production data was available to be used for reconciliation.

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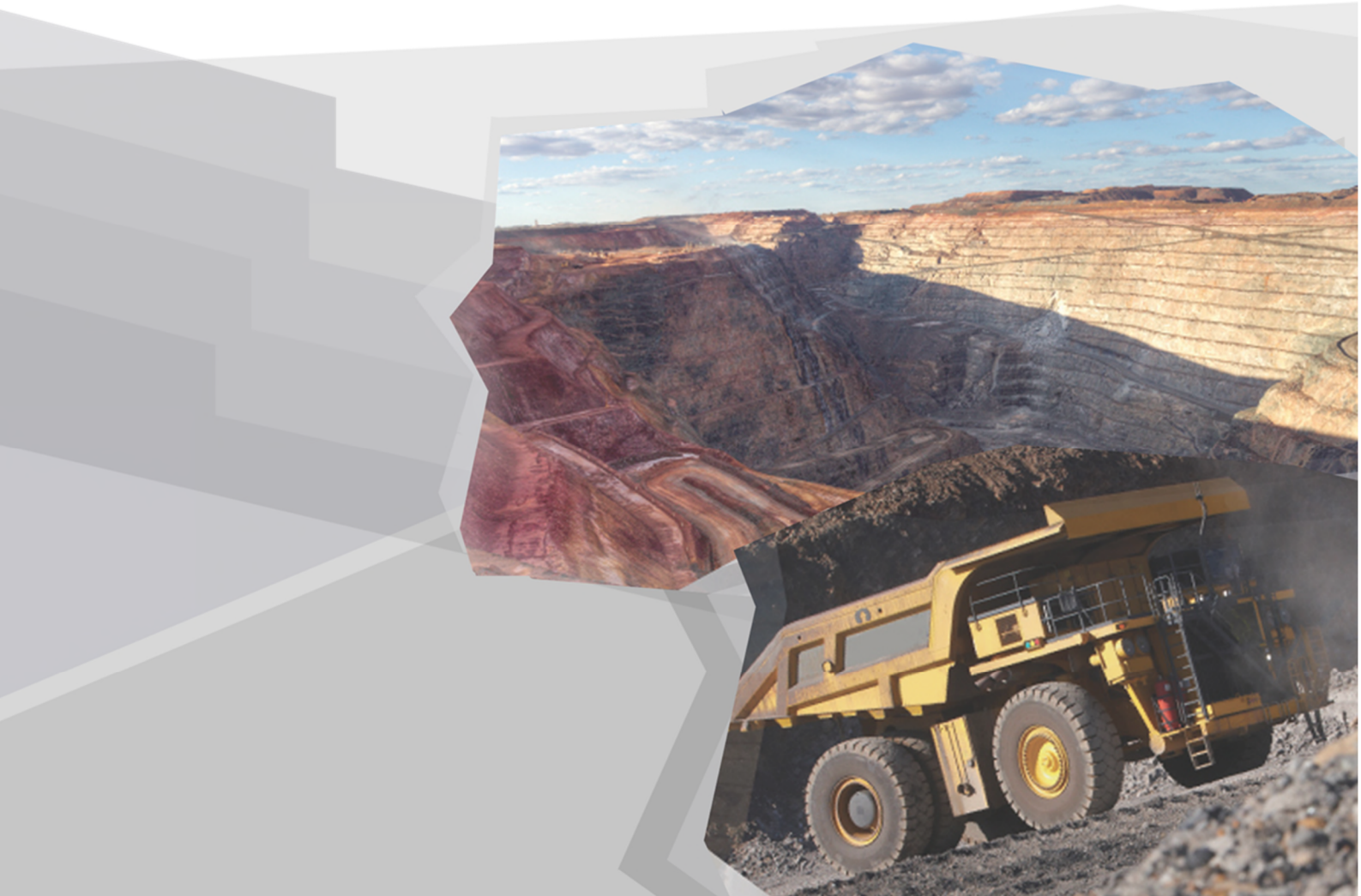
Appendix 4B
Table 1 JORC Compliance Check List For Ore Reserves



Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	This JORC Reserve is estimated from JORC (2012) Code compliant Coal Resources Statement signed by Mr Oki Wijayanto. This Statement and the model associated with it formed the basis of the subsequent Coal Reserve estimate. Coal Resources are reported inclusive of the Coal Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Site visits were undertaken by RPM Reserves Competent Person prior to the reference date of the Statement. The site visit only limited to Bayan operation at Tabang existing operation area. Others concession at North and South Pakar has not been operated yet.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	The Project is an undeveloped green field. A Life of Mine (LOM) plan has been developed based on the SA practical pit that has been used as a basis to estimate the Reserve. A LOM plan is considered by RPM to be equivalent to a Pre-feasibility study mine plan. The process used in converting the Coal Resources into Coal Reserves includes defining viable pit limits and applying mining cost, revenue and other modifying factors to the Coal Resources to estimate Coal Reserves.

Criteria	JORC Explanation	Commentary
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	All seams that have been modelled have used the quality information contained within the coal quality model, with an allowance for dilution and loss based on assumed rock qualities. No ash cut off has been applied. Minimum Seam thickness defined as mineable was 0.5 m Minimum Separable thickness parting defined at 0.3 m
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling. The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). The mining dilution factors used. The mining recovery factors used. Any minimum mining widths used.	The practical pit shell design was developed as the basis of the reported quantities. This pit was designed base on a selected optimisation shell which was cross checked against the break Even Strip Ratio (BESR) for the project. The mining method utilizes appropriately sized excavator and truck fleets to achieve the coal selection, uncovering and mining. Geotechnical studies of the rock strength and other material characteristics undertaken at SA determined the parameters used as the basis of the pit design. Coal loss from Roof of 80mm and Floorof 50 mm was modelled. Dilution total of 100mm (50mm from Roof and 50mm from Floor) Mining Global recovery of 96% was applied. A minimum mining width of 40m has been applied in the pit bottom design as part of optimisation process to

Criteria	JORC Explanation	Commentary
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. The infrastructure requirements of the selected mining methods. `	determine the pit shell. The Inferred coal was identified in the seams with insufficient quality drill holes for Measured or Indicated Resource confidence. The coal was identified within the geological model and the pit designs. These inferred seams represent 24% of the coal within the overall resource boundary and 44% of the total planned LOM mineable quantity, The SA project when developed will utilise the existing infrastructure at PT. Bara Tabang (BT) and PT. Fajar Sakti Prima (FSP) which are Bayan Subsidiary companys.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. Whether the metallurgical process is well-tested technology or novel in nature. The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. Any assumptions or allowances made for deleterious elements.	The ROM coal is planned to be dumped into graded stockpiles or directly to the crusher. The ROM coal will be feed to the ROM crusher, sized and screened. The coal will be blended to the average grade being created within the period of time for the stockpile construction. Beyond blending and screening no further metallurgical processing is undertaken on the Product coal. Within the global losses there is an allowance that accounts for the loss in volume caused by conveying and general spillage.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste	SA doesn't have the AMDAL yet since it is still in exploration status. SA is currently preparing Exploration

Criteria	JORC Explanation	Commentary
	rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	Reports, Feasibility Studies and an Environmental Impact Study (AMDAL).
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	All infrastructure is in place to support the production from the project. The infrastructure location is at the northern end of SA (Bara Tabang area)
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study. The methodology used to estimate operating costs. Allowances made for the content of deleterious elements. The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products. The source of exchange rates used in the study. Derivation of transportation charges. The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. The allowances made for royalties payable, both	The capital cost estimate for the Project has not been updated as part of the LOM. As all the infrastructure and facilities are in place for when the Project is developed and a mining contractor operation is envisaged the quantum of capital required is not significant. Operating cost has been supplied by Client based on the current contracted rates for operations in adjacent pits and these rates have been reviewed by RPM and are believed to be reasonable and in line with contractor mining rates that would be expected in the Indonesian coal mining industry. Royalties are based on Government statutory royalties.

Criteria	JORC Explanation	Commentary
	Government and private.	
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. .	Forward pricing in the economic model is based on the real dollar value of the coal as defined by the forecast coal price of USD70/t for benchmark coal quality of 6322 kcal/kg gar CV. The benchmark price is adjusted to reflect the actual product coal quality. All costs and revenues are based on a USD pricing basis so there is no exchange variation of the project financials.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. A customer and competitor analysis along with the identification of likely market windows for the product. Price and volume forecasts and the basis for these forecasts. For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	No studies have been undertaken for this project, for market analysis. Markets for this type of product coal produced in Indonesia are well established and product coal from the Clients adjacent operations are sold into these markets It is expected the current coal sales agreements will be rolled over or continued as mining moves to the SA area.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. NPV ranges and sensitivity to variations in the significant assumptions and inputs.	The economic pit limits were determined by the marginal cost versus revenue analysis. The cash flow for the Project over the estimated 13 year mine life is positive also delivering a positive NPV at a discount factor of 10%which is commonly used to evaluate Indonesian coal projects.

Criteria	JORC Explanation	Commentary
		The economics of the project is most sensitive to the coal price used in the determination of the pit limits and the generation of the revenue cash flow.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	SA is currently preparing an Environmental Impact Study (AMDAL).
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: Any identified material naturally occurring risks. The status of material legal agreements and marketing arrangements. The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	All coal mining projects operate in an environment of geological uncertainty, RPM is not aware of any potential technical factors, legal, marketing or otherwise that could affect the operation viability.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	All of the Measured category Coal Resource contained within the pit design has been assigned to the Proved Coal Reserves after the application of the appropriate

Criteria	JORC Explanation	Commentary
	Whether the result appropriately reflects the Competent Person's view of the deposit. The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	modifying factors. All of the Indicated category Coal Resource contained within the pit design has been assigned to Probable Coal Reserves after the application of the appropriate modifying factors
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	Internal review has been undertaken by RPM senior staff and the outcome of the Reserve estimate has been confirmed..
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	The Reserve estimate is most sensitive to the prevailing long term coal price used to determine the pit limits and the BESR. The cost factors used in determining the pit limits and BESR are well know known and understood from contractor mining operations being carried out in concession adjacent to the Project.

Criteria	JORC Explanation	Commentary
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	